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MONTHLY REPORT • ECONOMIC AND FINANCIAL MARKET OUTLOOK

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ECONOMIC & FINANCIAL ENVIRONMENT

FINANCIAL MARKETS

Will inflation trigger new turbulences in the financial markets?

INTERNATIONAL ECONOMY

The rise in commodity prices and its impact on inflation

SPANISH ECONOMY

Pent-up demand: one of the main drivers of the economic recovery

PORTUGUESE ECONOMY

Portuguese investment shines in a year marked by the pandemic

DOSSIER: NGEU EUROPEAN FUNDS: THE SPRING BOARD FOR THE DIGITAL LEAP

Public policies for the diffusion of technology

NGEU: an international comparison of the recovery plans and their investments in new technologies

Digital NGEU: an important leap or not?

NGEU: the action plans in the digital sphere in key sectors of the Spanish economy

**MONTHLY REPORT -
ECONOMIC AND FINANCIAL
MARKET OUTLOOK**
September 2021

The *Monthly Report* is a publication developed jointly by CaixaBank Research and BPI Research (UEEF)

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Exit strategies

As has been evident in recent weeks, there are few things more important than having a proper exit strategy once a mission comes to an end. This also applies to the economy, where the appropriateness of indefinitely maintaining the economic policy programme which, quite rightly, has been used for the past year and a half to address the crisis triggered by the pandemic is beginning to be questioned. Progress in the vaccination rates and the recovery of mobility are placing us in a different phase of the business cycle compared to 12 months ago, and this shift is triggering bottlenecks along the price-formation chain (transportation, logistics, etc.), which in turn are affecting the behaviour of inflation. While inflation may not be a precise measure of the current temperature of the economy given the exceptional circumstances we find ourselves in (even using core readings), it does show that the balance of risks is beginning to change.

For now, the consensus of analysts continues to argue that much of the current price rally is driven by transient factors (base effects and temporary imbalances between demand and supply). On this basis, the surprising year-on-year rates at which the consumer price index is climbing in the US (5.4%) and Europe (3%) should be diluted over the coming months as supply adjusts to the sharp increase in demand for both goods and services. This is very important for the future of the recovery, because negative effects on corporate margins and household purchasing power are already beginning to materialise (especially in emerging countries). If price increases become entrenched along the production chain and unit labour costs begin to rise, the good behaviour of external demand in recent years in countries such as Spain would be jeopardised.

What should central banks do in these circumstances? On the one hand, they should not rush, but at the same time they should adapt the road map as and when changes are detected in the economic outlook. If the new path is well designed and, above all, properly communicated, the normalisation of monetary policy does not have to translate into a significant tightening of financial conditions. As the first central bank among the major developed countries forced to make a move, the Fed is managing to achieve this balance, at least for now. Powell's announcement at the Jackson Hole meeting that tapering (a reduction in the volume of debt purchases) is likely to begin by the end of the year was well received by the markets, as the head of the Fed also anticipated that interest-rate hikes will be left for further down the line. This stands in stark contrast to the time Bernanke announced the beginning of tapering back in 2013, when it caused a storm in the financial markets.

In the case of Europe there is less urgency, despite the fact that inflation has stood at its highest levels since 2011 during the summer and economic activity has maintained a positive tone, judging by the signals coming from the surveys and the high-frequency indicators. Given the unease that some members of the ECB Council are beginning to show, in the short term there will most likely only be a slight downward adjustment to the volume of purchases under the PEPP (the programme created to combat the impact of the pandemic) in the last quarter of the year. Meanwhile, the ECB's new strategy announced in July, which follows the strategy set out by the Fed 12 months ago, will begin to be implemented with the aim of achieving greater flexibility in order to fit the dual target of inflation and financial stability into the new economic reality. This update make the target more symmetrical in order to boost the capacity to respond to the risk of deflation, it incorporates into the daily toolbox the exceptional instruments used in recent years, and it foresees expanding the list of components which comprise the price index to include housing under ownership (currently, only rentals are included). At present, the part that still needs a little more emphasis is the adjustment of the future direction of monetary policy (forward guidance), which should facilitate the formation of interest-rate expectations in the markets. For the time being, the message is that the European monetary authority will need firmer signals that the medium-term inflation forecasts (including readings of price trends) are converging on the target rate before signalling a withdrawal of the stimulus. This has led to a slight delay in when investors expect to see a rate hike in the euro area. More symmetry, more flexibility and the loss of the importance of monetary variables in the analysis reflect the fact that the ECB wants to leave the mark of the Bundesbank behind it, something that will undoubtedly facilitate the complex exit strategy that the central banks will have to address over the coming years.

José Ramón Díez Guijarro
September 2021

Chronology

JULY 2021

- 6 Iran informed the International Atomic Energy Agency of its uranium enrichment activities, a decision quickly condemned by several countries.
- 15 The COVID-19 Delta variant rapidly spreads around the world.
- 23 The 2020 Tokyo Olympic Games are held without any crowds in the stands.
- 30 First sentence in Hong Kong under the controversial national security law.

MAY 2021

- 10 New crisis between Israel and Hamas with attacks in Israel and the Gaza Strip lasting two weeks. The ceasefire was established at the end of the month.
- 19 The EU opens its borders to fully-immunised tourists.
- 20 Global Health Summit organised by the G-20 and the EU in which support was pledged for greater production and distribution of vaccines to poor countries.

AUGUST 2021

- 1 The withdrawal from Afghanistan by the US and its European allies accelerates and the Taliban regain power.
- 9 The UN's Climate Change report talks of mankind's responsibility in relation to global warming and warns of changes that are irreversible for centuries.
- 17 The European Commission disbursed the first 9 billion euros of the NGEU funds to Spain.

JUNE 2021

- 11 G7 summit at which an agreement was reached on a global minimum tax on multinationals.
- 15 First issue linked to Next Generation EU, raising 20 billion euros.
Five-year truce agreed by the EU and the US in the trade dispute between Airbus and Boeing.
- 16 The European Commission endorses Spain's Recovery and Resilience Plan.

APRIL 2021

- 1 OPEC and its partners approve a gradual increase in oil production for May, June and July 2021.
- 27 The European Parliament gives its final approval for the agreement governing the new relationship between the EU and the United Kingdom, already in force since January.
- 30 Spain submits its Recovery Plan to the European Commission to gain access to NGEU funds.

Agenda

SEPTEMBER 2021

- 2 Spain: registration with Social Security and registered unemployment (August).
- 3 Spain: Moody's and DBRS ratings.
- 9 Portugal: international trade (July).
Governing Council of the European Central Bank meeting.
- 10 Portugal: S&P rating.
- 16 Spain: quarterly labour cost survey (Q2).
- 17 Spain: S&P rating.
Portugal: Moody's rating.
- 21-22 Federal Open Market Committee meeting.
- 22 Spain: loans, deposits and NPL ratio (July and Q2).
Portugal: Home prices (Q2).
- 23 Spain: GDP breakdown (Q2).
Spain: balance of payments and NIIP (Q2).
Portugal: GDP breakdown (Q2).
- 29 Spain: CPI flash estimate (September).
Portugal: business and consumer confidence indicator (September).
- 30 Spain: household savings rate (Q2).
Portugal: NPL ratio (Q2).
Portugal: preliminary tourism activity (August).

OCTOBER 2021

- 4 Spain: registration with Social Security and registered unemployment (September).
- 11 Portugal: turnover in services (August).
Spain: financial accounts (Q2).
- 14-15 European Council meeting.
- 22 Spain: loans, deposits and NPL ratio (August).
- 28 Spain: labour force survey (Q3).
Spain: CPI flash estimate (October).
Portugal: business and consumer confidence indicator (October).
Governing Council of the European Central Bank meeting.
US: GDP (Q3).
- 29 Spain: GDP flash estimate (Q3).
Portugal: GDP flash estimate (Q3).
Portugal: industrial production (September).
Portugal: preliminary tourism activity (September).
Euro area: GDP (Q3).

COVID-19: the final season?

The first season of the COVID-19 series caught us by surprise and totally unprepared. It was short, lasting barely a few months in the major developed countries, but the experience was terrible. The second season was not so intense, but it was longer, which in the end made it also very difficult. The surprise effect dissipated and, with some imagination, we were able to recover part of our old life, but we still had no tools to deal with the virus. In the third instalment of the series, in which we are currently immersed, we now have effective tools to combat the virus. We are quickly recovering much of the life we had a year and a half ago, and this is fuelling the recovery of social and economic activity.

The macroeconomic data published during the summer reflect this. Overall, they have been positive and corroborate the idea that global activity is making a rapid recovery. In the US, as anticipated, GDP already stood above pre-COVID levels. It grew by 1.6% quarter-on-quarter in Q2, and the latest data show that the economy remains buoyant in Q3 despite the surge in COVID-19 cases. In this regard, the slowdown in the vaccination rate in recent months is concerning. The percentage of the population that is immunised stands at 52%, well below the 60% in Germany and France or the 71% in Spain.

The dynamics of the Chinese economy are also encouraging. GDP grew by 1.3% quarter-on-quarter in Q2, slightly higher than expected. The latest indicators have slowed slightly, but this is consistent with an economy that is already in a more mature phase of the recovery process and is reducing the stimuli. We can rule out alarmist readings that interpret the latest data as a shift of trend.

The biggest surprise of the summer has occurred in the so-called Old Continent. The euro area's GDP grew by an extraordinary 2.0% in Q2, exceeding expectations, and it now lies «only» 3.0% below pre-pandemic levels. The economic revival was widespread across the major countries of the bloc, thanks to the easing of restrictions on mobility and activity, as well as the rapid vaccination of the population. In addition, the highest frequency data suggest that this buoyancy persists in Q3.

The Spanish economy has performed particularly well. GDP grew by 2.8% quarter-on-quarter in Q2, and the latest indicators suggest that growth will remain at around 3.0% in Q3. The revival of tourism is key to this growth. While still a far cry from pre-pandemic levels,

tourism is experiencing a rapid recovery and in Q4 it could reach a level of activity equivalent to 75% of the pre-pandemic level (in Q4 2020 it was at 25%). However, the area which best illustrates the rapid and vigorous nature of the recovery is the labour market: the number of workers registered with Social Security and not on furlough now lies just 1.4% below the pre-COVID level.

If there are no new mutations of the virus that reduce the effectiveness of the vaccines – a risk that will accompany us for a long time to come – then the global economic revival will be consolidated in the coming quarters and we will likely close 2021 and 2022 with high growth rates. The precise extent of those high growth rates will end up depending, above all, on two factors. On the one hand, it will depend on the lack of supplies in several key sectors. If this situation persists for longer than expected, besides acting as a restraint for the recovery, it will also keep inflation high for longer, and the major central banks could be forced to bring forward the process of monetary normalisation. Right now, all the indicators suggest that both the Fed and the ECB will begin to reduce the volume of net asset purchases during the last quarter of this year, but we continue to expect the financial conditions to remain highly accommodative for a long time into the future.

The second element that needs to be closely monitored over the coming quarters is investment. Unlike the previous expansionary cycle, in which it performed very poorly, the macroeconomic outlook anticipated by the main analyst groups foresees vigorous growth in investment, spurred on by the fiscal stimulus plans, the demands arising from the fight to combat climate change and the acceleration of the digitalisation process after the pandemic. If this trend in investment is confirmed, in addition to boosting the short-term recovery it will also make medium- and long-term growth more sustainable. We are confident that the working assumptions which underpin this macroeconomic outlook will be confirmed, and that this will be the third and final season of the COVID-19 series.

Oriol Aspachs

Average for the last month in the period, unless otherwise specified

Financial markets

	Average 2000-2007	Average 2008-2017	2018	2019	2020	2021	2022
INTEREST RATES							
Dollar							
Fed funds (upper limit)	3.43	0.55	2.50	1.75	0.25	0.25	0.25
3-month Libor	3.62	0.75	2.79	1.91	0.23	0.20	0.40
12-month Libor	3.86	1.26	3.08	1.97	0.34	0.35	0.70
2-year government bonds	3.70	0.80	2.68	1.63	0.13	0.25	0.50
10-year government bonds	4.70	2.58	2.83	1.86	0.93	2.00	2.10
Euro							
ECB depo	2.05	0.32	-0.40	-0.50	-0.50	-0.50	-0.50
ECB refi	3.05	0.90	0.00	0.00	0.00	0.00	0.00
Eonia	3.12	0.55	-0.36	-0.46	-0.47	-0.48	-0.48
1-month Euribor	3.18	0.67	-0.37	-0.45	-0.56	-0.50	-0.47
3-month Euribor	3.24	0.85	-0.31	-0.40	-0.54	-0.52	-0.46
6-month Euribor	3.29	1.00	-0.24	-0.34	-0.52	-0.49	-0.40
12-month Euribor	3.40	1.19	-0.13	-0.26	-0.50	-0.46	-0.34
Germany							
2-year government bonds	3.41	0.55	-0.60	-0.63	-0.73	-0.65	-0.45
10-year government bonds	4.30	1.82	0.25	-0.27	-0.57	-0.25	0.00
Spain							
3-year government bonds	3.62	2.06	-0.02	-0.36	-0.57	-0.30	-0.04
5-year government bonds	3.91	2.59	0.36	-0.09	-0.41	-0.16	0.14
10-year government bonds	4.42	3.60	1.42	0.44	0.05	0.35	0.60
Risk premium	11	178	117	71	62	60	60
Portugal							
3-year government bonds	3.68	4.02	-0.18	-0.34	-0.61	-0.45	-0.06
5-year government bonds	3.96	4.67	0.47	-0.12	-0.45	-0.25	0.20
10-year government bonds	4.49	5.35	1.72	0.40	0.02	0.35	0.65
Risk premium	19	353	147	67	60	60	65
EXCHANGE RATES							
EUR/USD (dollars per euro)	1.13	1.29	1.14	1.11	1.22	1.17	1.19
EUR/GBP (pounds per euro)	0.66	0.83	0.90	0.85	0.90	0.87	0.85
USD/GBP (pounds per dollar)	0.59	0.64	0.79	0.76	0.74	0.75	0.71
OIL PRICE							
Brent (\$/barrel)	42.3	82.5	57.7	65.2	50.2	68.0	63.0
Brent (euros/barrel)	36.4	63.2	50.7	58.6	41.3	58.1	52.9

■ Forecasts

Percentage change versus the same period of the previous year, unless otherwise indicated

International economy

	Average 2000-2007	Average 2008-2017	2018	2019	2020	2021	2022
GDP GROWTH							
Global	4.5	3.4	3.6	2.8	-3.3	5.9	4.6
Developed countries	2.7	1.3	2.3	1.6	-4.7	5.4	4.2
United States	2.7	1.5	2.9	2.3	-3.4	6.5	4.3
Euro area	2.2	0.7	1.9	1.3	-6.7	4.7	4.9
Germany	1.6	1.3	1.3	0.6	-5.1	3.3	4.5
France	2.2	0.8	1.8	1.8	-8.0	5.5	4.3
Italy	1.5	-0.5	0.8	0.3	-8.9	4.6	4.6
Portugal	1.5	0.0	2.9	2.5	-7.6	4.0	5.1
Spain	3.7	0.3	2.4	2.0	-10.8	6.3	6.0
Japan	1.4	0.5	0.6	0.0	-4.7	2.3	2.2
United Kingdom	2.9	1.1	1.3	1.4	-9.8	7.0	6.0
Emerging and developing countries	6.5	5.1	4.5	3.6	-2.2	6.3	4.9
China	10.6	8.3	6.7	6.0	2.3	8.3	5.6
India	9.7	6.8	7.3	4.8	-7.0	9.2	7.3
Brazil	3.6	1.6	1.8	1.4	-4.1	4.0	2.5
Mexico	2.4	2.1	2.2	-0.2	-8.3	4.8	2.7
Russia	7.2	0.9	2.5	1.3	-3.1	3.0	2.2
Turkey	5.4	5.1	2.8	0.9	1.6	4.3	3.4
Poland	4.2	3.4	5.4	4.8	-2.7	4.5	4.8
INFLATION							
Global	4.1	3.7	3.6	3.5	3.2	4.0	3.3
Developed countries	2.1	1.5	2.0	1.4	0.7	2.5	1.7
United States	2.8	1.7	2.4	1.8	1.2	4.1	2.3
Euro area	2.1	1.4	1.8	1.2	0.3	2.0	1.5
Germany	1.7	1.3	1.9	1.4	0.4	2.6	1.7
France	1.8	1.2	2.1	1.3	0.5	2.0	1.5
Italy	1.9	1.5	1.2	0.6	-0.1	1.6	1.4
Portugal	3.0	1.2	1.0	0.3	0.0	0.9	1.3
Spain	3.2	1.4	1.7	0.7	-0.3	2.4	1.7
Japan	-0.3	0.3	1.0	0.5	0.0	0.0	0.6
United Kingdom	1.9	2.4	2.5	1.8	0.9	1.9	1.6
Emerging countries	6.7	5.6	4.9	5.1	5.1	5.1	4.5
China	1.7	2.6	2.1	2.9	2.5	1.1	1.5
India	4.5	8.0	3.9	3.7	6.6	5.1	5.5
Brazil	7.3	6.1	3.7	3.7	3.2	5.5	3.8
Mexico	5.2	4.2	4.9	3.6	3.4	4.2	3.4
Russia	14.2	8.7	2.9	4.5	4.9	3.5	4.0
Turkey	27.2	8.4	16.2	15.5	14.6	14.2	8.0
Poland	3.5	2.0	1.2	2.1	3.7	4.1	3.0

Forecasts

Percentage change versus the same period of the previous year, unless otherwise indicated

Spanish economy

	Average 2000-2007	Average 2008-2017	2018	2019	2020	2021	2022
Macroeconomic aggregates							
Household consumption	3.6	-0.6	1.8	0.9	-12.4	9.6	4.6
Government consumption	5.0	0.9	2.6	2.3	3.8	2.5	1.0
Gross fixed capital formation	5.6	-2.8	6.1	2.7	-11.4	4.8	10.4
Capital goods	4.9	-0.5	5.4	4.4	-13.0	11.7	9.0
Construction	5.7	-5.2	9.3	1.6	-14.0	-0.5	11.3
Domestic demand (vs. GDP Δ)	4.4	-0.7	3.0	1.4	-8.8	6.8	4.9
Exports of goods and services	4.7	3.1	2.3	2.3	-20.2	8.4	10.0
Imports of goods and services	7.0	-0.3	4.2	0.7	-15.8	10.3	6.7
Gross domestic product	3.7	0.3	2.4	2.0	-10.8	6.3	6.0
Other variables							
Employment	3.2	-1.0	2.6	2.3	-7.5	5.5	3.8
Unemployment rate (% of labour force)	10.5	20.5	15.3	14.1	15.5	15.1	14.0
Consumer price index	3.2	1.4	1.7	0.7	-0.3	2.4	1.7
Unit labour costs	3.0	0.1	1.2	2.4	5.1	-0.5	0.2
Current account balance (% GDP)	-5.9	-0.8	1.9	2.1	0.7	1.5	1.6
External funding capacity/needs (% GDP)	-5.2	-0.3	2.4	2.6	0.9	1.7	1.8
Fiscal balance (% GDP) ¹	0.4	-6.7	-2.5	-2.9	-11.0	-7.9	-5.4

Note: 1. Excludes losses for assistance provided to financial institutions.

Forecasts

Portuguese economy

	Average 2000-2007	Average 2008-2017	2018	2019	2020	2021	2022
Macroeconomic aggregates							
Household consumption	1.7	0.1	2.6	2.6	-5.8	3.1	4.3
Government consumption	2.3	-0.6	0.6	0.7	0.4	3.2	0.4
Gross fixed capital formation	-0.3	-2.0	6.2	5.4	-1.8	7.4	7.9
Capital goods	6.2	2.0	9.2	4.3	-6.1	17.4	8.4
Construction	-1.9	-4.4	4.7	7.2	4.7	5.4	5.9
Domestic demand (vs. GDP Δ)	1.3	-0.5	3.1	2.8	-4.6	4.2	4.5
Exports of goods and services	5.2	4.0	4.2	4.0	-18.7	9.4	8.0
Imports of goods and services	3.6	2.2	5.0	4.7	-12.0	9.6	5.9
Gross domestic product	1.5	0.0	2.9	2.5	-7.6	4.0	5.1
Other variables							
Employment	0.4	-1.0	2.8	1.2	-1.9	2.0	1.2
Unemployment rate (% of labour force)	6.1	12.3	7.2	6.6	7.0	7.0	6.9
Consumer price index	3.0	1.2	1.0	0.3	0.0	0.9	1.3
Current account balance (% GDP)	-9.2	-3.5	0.6	0.4	-1.2	-0.9	-0.4
External funding capacity/needs (% GDP)	-7.7	-2.2	1.6	1.2	0.1	1.0	1.8
Fiscal balance (% GDP)	-4.6	-6.1	-0.3	0.1	-5.7	-4.8	-3.0

Forecasts

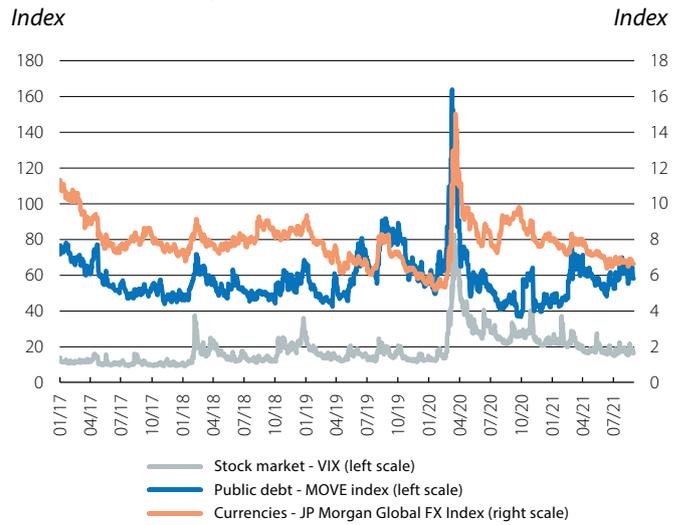
The financial markets save the summer with no upheavals

Investors seek guidance from the central banks. Thanks to a more widespread and sustained economic revival, the summer has passed with relative calm in the financial markets. The colour green dominated trading floors, interest rates and risk premia remained at accommodative levels and, in general, there was little volatility. This calm was supported by improvements in the indicators and in the economic outlook, bolstered by the rapid progress in the vaccination campaigns to tackle the pandemic. In turn, these positive trends have laid the foundations for the US Federal Reserve to prepare to withdraw its monetary stimulus. It is on this topic that all eyes are focused on the return from the holidays. The details of how and when are not yet known. However, with the prospect of the Fed making a move before the end of the year, the international financial markets have already begun to adjust during the summer. Overall, the adjustment was orderly, as the Fed has promised that it will be predictable and will withdraw the stimulus gradually. However, emerging currencies could not help showing weakness against the dollar, while their stock markets suffered greater turbulence. This was especially the case in Asia, where they were strained by China's tightening of regulations on the technology sector.

The stock markets, torn between the economic revival and the withdrawal of stimuli. Gains dominated the stock markets of the major advanced economies between July and August and, with a few exceptions, the benchmark indices now lie comfortably above their pre-pandemic levels. These gains have been supported by the economic revival and the improvement in business earnings: more than 80% and 60% of the companies of the S&P 500 and the Stoxx Europe 600 indices, respectively, outperformed analysts' expectations in Q2 2021, and earnings expectations for the coming quarters continue to improve. All of this is still occurring in an environment of accommodative financial conditions. That said, it is significant to note that, besides a few sessions with greater volatility, the signs of tighter monetary conditions did not weigh on stock prices over the summer and gains were widespread across the various sectors.

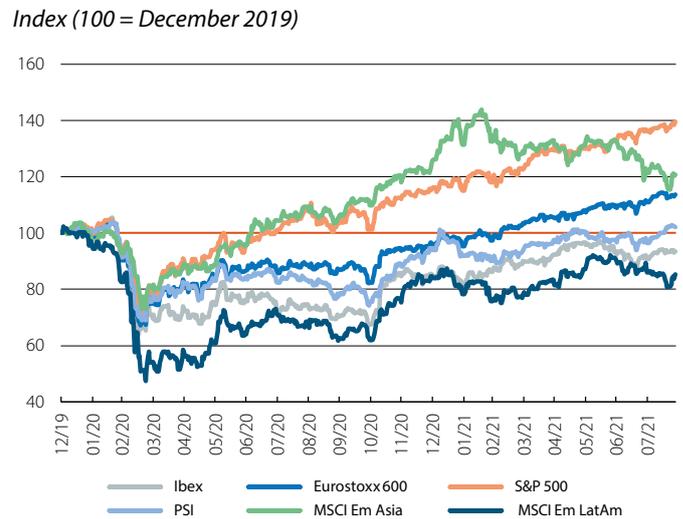
Inflation, a risk that did not put off investors over the summer. When US inflation began to rally in the spring, interest rates were significantly stressed (between February and April, the yield on the 10-year treasury surged more than 60 bps), reflecting the risk it poses to the markets' placidity. However, since then the mood has tempered, and according to the latest prices, investors seem to share the view of the central banks and analysts that the price pressures will be transient. For instance, at the end of August inflation swaps pointed towards higher short-term pressures (around 3% over the one and two-year horizon), while long-term expectations have tempered towards 2%. The story is different in Europe, where inflation expectations do not factor in risks of overheating but rather have remained below the ECB target for years. In recent months, however, they have picked up somewhat as a result of the economic revival and the ECB's messages in which the central bank has adopted a more tolerant stance on inflation.

Implicit volatility in the markets



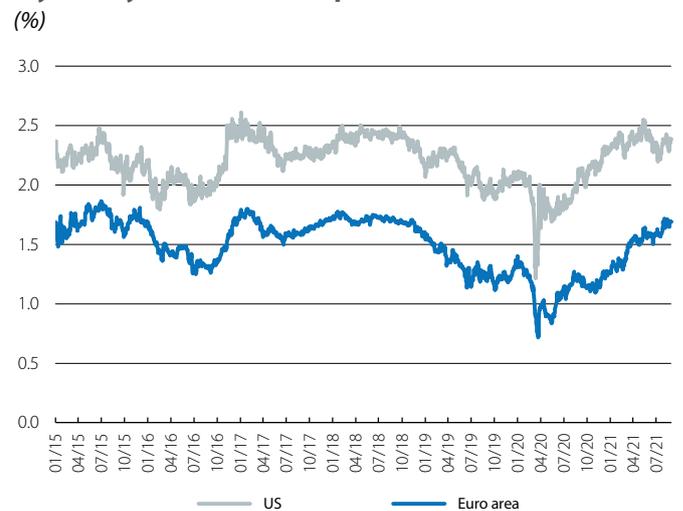
Source: CaixaBank Research, based on data from Bloomberg.

International stock markets



Source: CaixaBank Research, based on data from Bloomberg.

5-year 5-year inflation expectations *



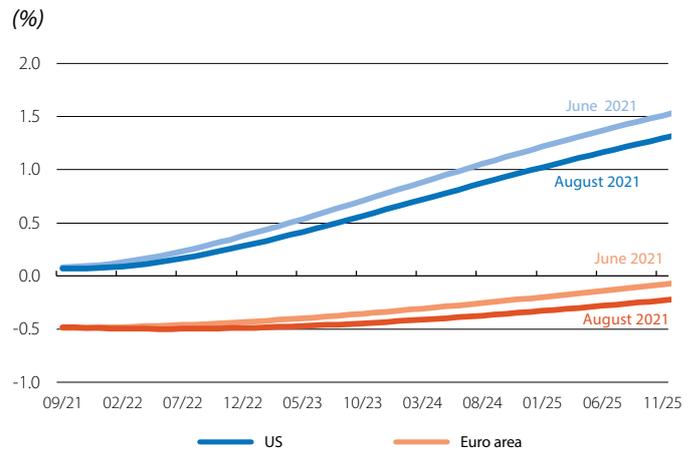
Note: * Based on inflation swaps.
Source: CaixaBank Research, based on data from Bloomberg.

The ECB reviews its strategy and pushes back the prospect of rate hikes. Last July saw the ECB complete its strategic review launched in January 2020, and although the changes were more substantial than in the previous review conducted in 2003, they represent an evolution rather than a revolution in the ECB’s strategy. Firstly, the ECB set its inflation target simply at 2%, a clearer and more symmetrical formula than the previous target of «below but close to 2%». Secondly, the ECB confirmed that unconventional measures (such as asset purchases) will continue to be part of its toolbox, noting that if at some point aggressive stimulus measures are required, it is prepared to take them and to tolerate them triggering spikes in inflation above 2%, provided they are moderate and temporary. In addition, the ECB announced a desire to incorporate climate considerations into its decision-making (such as stress tests, collateral assessments, or asset purchases). To this end, it has prepared a road map up to the year 2024. Nevertheless, the strategic review already had material implications in July. The fact is that, with the new strategy, the ECB raised the bar for a rate hike: (i) inflation projections should be 2% in the medium and long term, and (ii) the recovery in inflation to 2% should be corroborated in the core inflation data and indicators themselves. This change reinforces the expectation of a long period of low interest rates in Europe, and this was reflected in market rates, which were very contained throughout the summer.

The Fed prepares to reduce its asset purchases. After buying high volumes of sovereign bonds and MBSs since the outbreak of the pandemic, the improving economic outlook and strong inflation rates and labour market data in the US have led preparations to be made for the withdrawal of the stimulus. In July, the central bank discussed for the first time the strategy for reducing net asset purchases (so-called tapering), and although no decision was taken, most members of the Fed considered it appropriate to begin this process in 2021. In addition, during the summer various regional chairs such as Robert Kaplan (Dallas Fed) and James Bullard (St. Louis) publicly stated their desire to soon announce the reduction in asset purchases. In this context, in late August the focus was on the words of the Fed’s chairman at the usual Jackson Hole symposium. There, Jerome Powell underscored the central bank’s intention to announce tapering before the end of the year. However, he cooled expectations that the decision would be imminent (i.e. at the September meeting), striking a balance between the strength of the economic data and the shadow with which the pandemic threatens the economy.

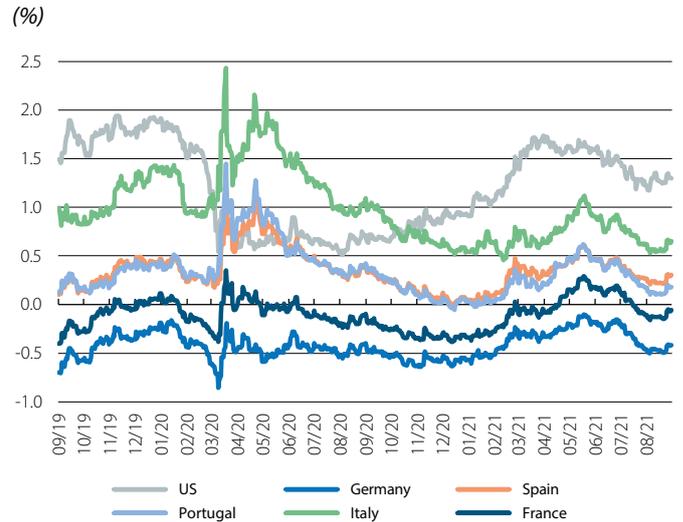
Emerging currencies cede ground to the dollar. The withdrawal of monetary stimulus in the US tends to shift some eyes towards emerging economies, and during the summer their currencies were unable to avoid a certain depreciation against the dollar. That said, many emerging countries entered the COVID-19 crisis with more balanced macroeconomic frameworks than in the past, and various central banks have also begun to establish a buffer by raising interest rates (mainly in emerging Europe, with Hungary, the Czech Republic and Russia; as well as in Latin America, with Brazil and Mexico).

Expectations regarding the Fed and ECB reference rates *



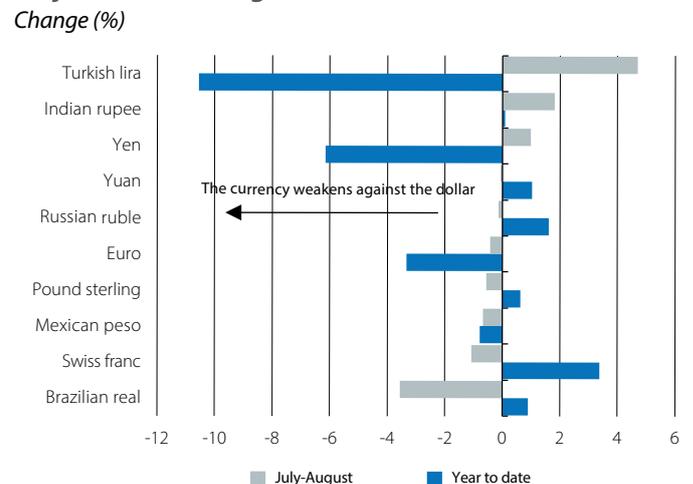
Note: * Forwards on the EFFR and the OIS rate of the euro area derived using the NSS model based on market yield curves. Source: CaixaBank Research, based on data from Bloomberg.

Yields on 10-year sovereign debt



Source: CaixaBank Research, based on data from Bloomberg.

Major currencies against the US dollar



Source: CaixaBank Research, based on data from Bloomberg.

Will inflation trigger new turbulences in the financial markets?

One of the main topics of discussion in this current phase of economic recovery is, without a doubt, inflation. In 2021, it has reached levels not witnessed since 2008 in the US, while in the euro area it is likely to reach levels not seen since 2012, fuelling risks of inflationary pressures. In fact, the latest inflation data have been notably higher than anticipated, especially in the US. In this context, we wonder to what extent these surprises have had a significant impact on the financial markets.

The historical relationship between inflation surprises and the financial markets

Historically, inflation surprises are related to significant movements in the financial markets. The main channel through which this occurs is inflation expectations. One way to illustrate this relationship is by looking at what happens to inflation swaps on the days when inflation data is released in the US and Germany.¹ In the second chart we can see the sensitivity of this financial product to the difference between the figure published and what was expected by the consensus, in this case Bloomberg, and we see that the relationship is positive over the period analysed. In the case of US swaps, for instance, a coefficient of 20 indicates that a 1-pp difference between the published and expected inflation rates tends to lead to a 20-bp increase in the 2-year inflation swap (which can be understood as the expected average inflation over the next two years).

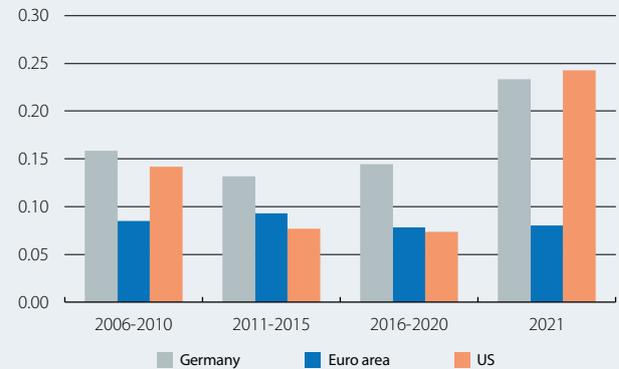
Other financial assets that are sensitive to inflation surprises are sovereign bonds, since we would expect their yields to rise when inflation rates are higher than expected, anticipating a more aggressive monetary-policy response or reflecting higher expected inflation. However, if we perform a similar exercise to that above, but this time using yields on the 10-year sovereign debt of Germany and the US, we see how over the period analysed the relationship is not as strong as it is in the case of swaps. Even so, the sensitivity in recent years has been positive.

Finally, our exercise finds no significant relationship between inflation surprises and the German DAX and the S&P 500 stock indices (at least on the day the inflation data is published). This result could be due to the fact that higher or lower than expected inflation rates can affect the stock market either positively or negatively,

1. We will use swaps linked to 2-year inflation. For 5-year 5-year inflation swaps, the results are very similar. Germany's preliminary inflation data is published a day or two before that of the euro area and anticipates the movements in the European financial markets.

Inflation surprises

(pps)



Note: Absolute value of the difference between the figure actually published (flash estimate for the euro area and Germany) and what the Bloomberg consensus was expecting.
Source: CaixaBank Research, based on data from Bloomberg.

US and euro area: sensitivity of inflation expectations to inflation surprises

Sensitivity coefficient



Note: We estimate the equation $\Delta\text{Swap}2Y_t = \beta (\pi_t^c - \pi_t) + \varepsilon_t$, where $\Delta\text{Swap}2Y_t$ is the daily change in the two-year inflation swap for the US and the euro area on the day inflation data are published for the US and Germany, respectively, π_t is the observed inflation for the US and Germany, π_t^c is the consensus expectation for the inflation figure in question, and ε_t is an error term. We estimate the regression using data from the 30 months prior to t and we show the value of β (sensitivity coefficient) over time.
Source: CaixaBank Research, based on data from Bloomberg.

depending on the current economic situation.² For example, higher than expected inflation rates in a context of economic recovery could be interpreted by the markets as a positive sign as it could represent greater buoyancy in economic activity, which in turn leads to higher corporate dividends. However, in a more buoyant phase of the cycle it could generate fears of overheating, making investment in equities less attractive.³

2. See J. Knif et al. (2008). «Stock market reaction to good and bad inflation news». Journal of Financial Research, 31(2), 141-166.

3. See «Does the potential rise in long-term yields pose a risk to equities?» in the MR07/2021.

How has this relationship behaved in 2021?

This year, if we look at the price fluctuations that have occurred in the financial markets on the days when inflation data for Europe and the US have been published, with inflation rates being notably higher than expected, we see that they have been relatively moderate. This has been helped by the communication from the major central banks, namely the ECB and the US Federal Reserve.

In the case of the euro area, it became clear from January that inflation would be high for temporary reasons (base effects, especially in the energy component, and supply bottlenecks), and the ECB was quick to announce that it would not alter its monetary policy stance.

In the US, meanwhile, the story has some nuances. Although inflation in 2021 was expected to be higher than in the euro area, the levels that both headline and core inflation are reaching (above 5% and 4%, respectively) have fuelled fears of overheating of the economy, especially since economic activity there has already exceeded pre-pandemic levels. At certain moments of the year, financial asset prices began to capture this scenario (for instance, between January and March the yield on 10-year sovereign debt surged by over 80 bps to reach 1.75%). However, this sensitivity of the markets to the risk of overheating moderated during the course of Q2, and asset prices now suggest a scenario in which the inflation rally ends up being only transitory. Thus, investors have changed their response to inflation surprises as the year has gone on. While the markets were sensitive to the initial data which reflected a rebound in inflation, in the following months this sensitivity moderated and investors converged on the Fed's view that the spike in prices is temporary. The last chart illustrates this change, as we see the daily change registered in the yield on 10-year treasuries on the three days when inflation data were published during Q2, with inflation being 0.6, 0.3 and 0.5 pps higher than expected, respectively. As can be seen, when the inflation data was published, the yield rose as expected. However, whereas the surprise in May led to an interest rate rally that gained intensity throughout the session, in June and July the initial movement was quickly undone.

In 2021 to date, inflation in the US and the euro area have been unusually high. However, we have seen that the sensitivity of financial asset prices to these inflation surprises has not been exceptional, especially when investors were satisfied with the idea that the spike in prices is largely due to transitory factors. Over the coming

US and Germany: sensitivity of the yield on 10-year sovereign debt to inflation surprises

Sensitivity coefficient



Note: We estimate the equation $\Delta i_t = \beta (\pi_t - \pi_t^e) + \varepsilon_t$, where Δi_t is the daily change in the yield on 10-year sovereign debt in the US and Germany on the day their respective inflation rates are published, π_t is the observed inflation in the US and Germany, π_t^e is the consensus expectation for the inflation figure in question, and ε_t is an error term. We estimate the regression using data from the 30 months prior to t and we show the value β (sensitivity coefficient) over time.

Source: CaixaBank Research, based on data from Bloomberg.

Yield on the 10-year treasury on the days inflation data are published

(0 = level at 14:30 in bps)



Note: The inflation data are published at 14:30 CEST.

Source: CaixaBank Research, based on data from Bloomberg.

quarters we will see whether we are indeed right and inflation returns to more contained levels or whether, on the contrary, inflationary pressures end up being persistent and the sensitivity of the financial markets is heightened.

Ricard Murillo Gili

Interest rates (%)

	31-August	30-June	Monthly change (bp)	Year-to-date (bp)	Year-on-year change (bp)
Euro area					
ECB Refi	0.00	0.00	0	0.0	0.0
3-month Euribor	-0.55	-0.54	-1	-0.3	-7.0
1-year Euribor	-0.50	-0.48	-2	-0.2	-12.8
1-year government bonds (Germany)	-0.66	-0.62	-4	4.8	-10.6
2-year government bonds (Germany)	-0.71	-0.66	-5	-1.3	-3.6
10-year government bonds (Germany)	-0.38	-0.21	-18	18.6	3.7
10-year government bonds (Spain)	0.34	0.41	-7	29.1	-6.0
10-year government bonds (Portugal)	0.21	0.39	-18	18.1	-20.3
US					
Fed funds (upper limit)	0.25	0.25	0	0.0	0.0
3-month Libor	0.12	0.15	-3	-11.9	-13.1
12-month Libor	0.24	0.25	-1	-10.7	-19.8
1-year government bonds	0.06	0.07	0	-4.1	-5.3
2-year government bonds	0.21	0.25	-4	8.8	7.8
10-year government bonds	1.31	1.47	-16	39.6	64.0

Spreads corporate bonds (bps)

	31-August	30-June	Monthly change (bp)	Year-to-date (bp)	Year-on-year change (bp)
Itraxx Corporate	45	47	-2	-2.8	-7.0
Itraxx Financials Senior	52	55	-2	-7.0	-6.3
Itraxx Subordinated Financials	100	103	-3	-10.7	-24.7

Exchange rates

	31-August	30-June	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
EUR/USD (dollars per euro)	1.181	1.186	-0.4	-3.3	-0.9
EUR/JPY (yen per euro)	129.920	131.750	-1.4	3.0	2.9
EUR/GBP (pounds per euro)	0.859	0.857	0.2	-3.9	-3.5
USD/JPY (yen per dollar)	110.020	111.110	-1.0	6.6	3.8

Commodities

	31-August	30-June	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
CRB Commodity Index	559.6	556.0	0.7	26.1	42.0
Brent (\$/barrel)	73.0	75.1	-2.8	40.9	60.1
Gold (\$/ounce)	1,813.6	1,770.1	2.5	-4.5	-7.9

Equity

	31-August	30-June	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
S&P 500 (USA)	4,522.7	4,297.5	5.2	20.4	28.2
Eurostoxx 50 (euro area)	4,196.4	4,064.3	3.3	18.1	28.0
Ibex 35 (Spain)	8,846.6	8,821.2	0.3	9.6	27.2
PSI 20 (Portugal)	5,417.1	5,035.0	7.6	10.6	25.8
Nikkei 225 (Japan)	28,089.5	28,791.5	-2.4	2.4	21.4
MSCI Emerging	1,308.7	1,374.6	-4.8	1.3	16.8

International economy: «normalisation» by the neighbourhood

An uneven recovery is underway. As the summer draws to an end, the global macroeconomic outlook has cleared, with the availability of both Q2 growth data and economic activity indicators for the period all the way up to August. If we had to summarise the recent pattern in a word, it would be «normalisation». In other words, what we are witnessing is a gradual shift towards phases of the businesses cycle less affected by the COVID-19 pandemic in many economies. Less affected does not mean that there is no impact whatsoever (the effects of the Delta variant are still among us). It also does not mean that all countries are in the same position in this shift towards the long-awaited «normalisation». In general terms, China and, far behind, the US are making progress in this direction, so the slower pace of economic activity indicated in the latest data should be taken in this context (although they are certainly also affected in part by the aforementioned Delta variant and the corresponding restrictions). In other economies, particularly in Europe, the recovery, and thus this «normalisation», is in an earlier phase.

Moving towards a less atypical 2022. The above trends look set to continue, and with the progress in the vaccination campaigns and in the absence of new variants of the virus that evade the effects of the vaccines, we can expect 2022 to continue to produce historically high global growth rates, but without the oscillations seen in 2020 and 2021. In this regard, the IMF's latest forecasts, which on the whole are in line with those of analysts, indicate global growth of slightly below 5% in 2022 (6.0% expected in 2021), with advanced economies growing at around 4.5% and emerging economies above 5%. The supply disruptions, particularly those affecting global supply chains, which are currently applying significant inflationary pressure in virtually every economy are also expected to fade, and this would confirm the temporary nature of the price shock as foreseen by the central banks and macroeconomic analysts.

US

US economic activity is already above pre-COVID levels.

Perhaps the most synthetic way to assess the journey towards the «normalisation» of activity is to look at how far away we are from pre-pandemic GDP levels. In this regard, and after growing by 1.6% quarter-on-quarter in Q2, the first major advanced economy to reach this milestone is that of the US. Although the growth rate was slightly lower than expected, it is nevertheless robust and clearly reflects the effects of the fiscal package approved in mid-March (1.9 trillion dollars) and

World: composite PMI



Source: CaixaBank Research, based on data from Markit.

IMF growth forecasts

July 2021

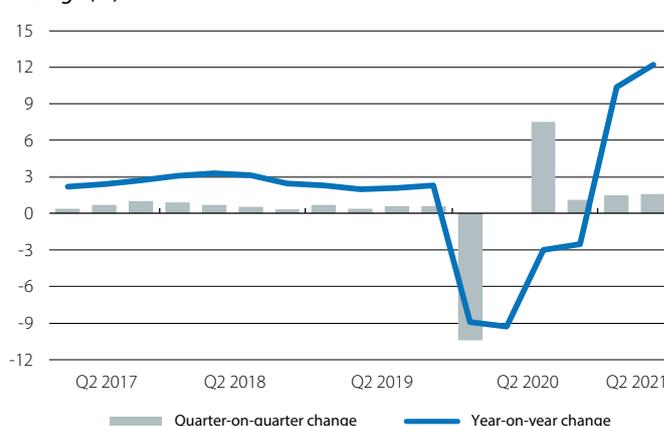
	2020	2021	2022	Cumulative 2020-2022
Global economy	-3.3	6.0 =	4.9 ↑	7.6
Advanced economies	-4.7	5.6 ↑	4.4 ↑	5.1
US	-3.5	7.0 ↑	4.9 ↑	8.3
Euro area	-6.7	4.6 ↑	4.3 ↑	1.8
Germany	-5.1	3.6 =	4.1 ↑	2.3
France	-8.2	5.8 =	4.2 =	1.2
Italy	-8.9	4.9 ↑	4.2 ↑	-0.5
Japan	-4.7	2.8 ↓	3.0 ↑	0.9
United Kingdom	-9.8	7.0 ↑	4.8 ↓	1.1
Emerging and developing economies	-2.2	6.3 ↓	5.2 ↑	9.4
China	2.3	8.1 ↓	5.7 ↑	16.9
India	-7.3	9.5 ↓	8.5 ↑	10.1
Brazil	-4.1	5.3 ↑	1.9 ↓	2.9
Mexico	-8.3	6.3 ↑	4.2 ↑	1.6
Russia	-3	4.4 ↑	3.1 ↓	4.4

Notes: The arrows (pointing up or down) indicate whether the forecast has been revised (up or down) compared to the IMF's previous forecasts. India's growth corresponds to the fiscal year, not the calendar year as in the case of the rest.

Source: CaixaBank Research, based on the IMF's July 2021 forecasts.

US: GDP

Change (%)



Source: CaixaBank Research, based on data from the Bureau of Economic Analysis.

the reopening of the economy. In the short term, the latter element will remain crucial, while little additional impetus can be expected from economic policy (bearing in mind that the measures already in place in the fiscal and monetary spheres remain exceptional).

As fiscal plans materialise, we move towards a new phase for monetary policy. As far as fiscal policy is concerned, as has been said, no changes are expected in the short term, although looking further ahead fiscal activism will not decline. In September, Congress will approve a new package of measures aimed at improving the country's classic infrastructure. Although the amount proposed is small (equivalent to 0.26% of 2020 GDP annually), it is the first agreement on the proposals presented by the Biden Administration in the spring (the American Jobs Plan, which deals with infrastructure, and the American Family Plan, which has a social focus). In the sphere of monetary policy, the strong labour market data (creation of 943,000 jobs in July) and inflation data (5.4%) open the door for the Fed to announce the beginning of reductions in its net asset purchases (tapering) before the end of the year (see the [Financial Markets section](#)).

EURO AREA

The gradual reopening process and the pace of the vaccination roll-out drive euro area growth. GDP for the region as a whole grew by an extraordinary 2.0% quarter-on-quarter and 13.7% year-on-year in Q2 2021 (exceeding forecasts). This placed the bloc's GDP at around 3.0% below its pre-pandemic level. All major countries experienced a strong revival, especially those in the south: Germany (1.6% quarter-on-quarter vs. -2.0% in Q1), France (1.1% vs. 0%), Italy (2.7% vs. 0.2%) and Spain (2.8% vs. -0.4%). Moreover, the surveys confirm that this buoyancy in the euro area persists at the beginning of Q3: the European Commission's sentiment index reached new historic highs (119.0 vs. 117.9) in July and Markit's PMI also confirmed the solid trend in activity up to August.

However, uncertainty remains high. The spread of the Delta variant has already led to some backtracking in the reopening process (as evidenced, for example, by the decline in Germany's IFO indicator in August). However, its effects on economic activity should be much lower than in previous waves (due to the adaptation of economic players and the high penetration of the vaccines, with around 65% of the population now vaccinated). On balance, growth in the region is likely to be nearing its peak, and we can expect to see a certain «normalisation» in the final months of the year towards more moderate, albeit still high, growth rates. In particular, we estimate a growth of 4.7% for 2021 as a whole and of 4.9% in 2022. These figures will also be supported by the initial disbursement of NGEU funds (the so-called pre-financial

US: CPI

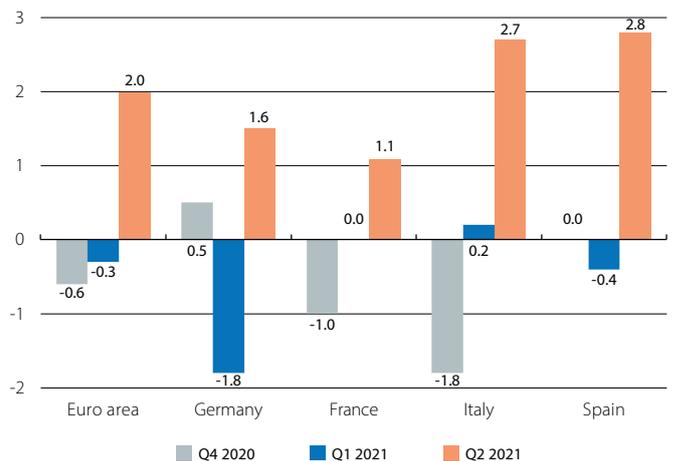
Year-on-year change (%)



Source: CaixaBank Research, based on data from the Bureau of Labor Statistics.

Euro area: evolution of GDP

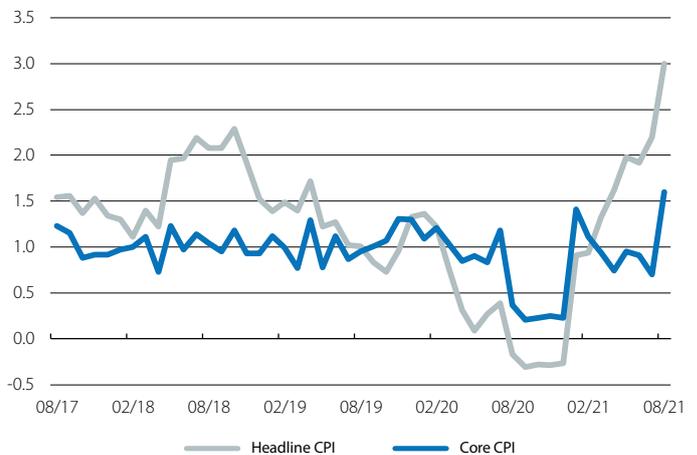
Quarter-on-quarter change (%)



Source: CaixaBank Research, based on data from Eurostat.

Euro area: CPI *

Year-on-year change (%)



Note: * Data corresponding to the HICP. Source: CaixaBank Research, based on data from Eurostat.

disbursements, which amount to 13% of the total and have already arrived in France, Italy, Spain and Portugal, among other countries). In this context, inflation in the euro area has rebounded (3.0% in August vs 0.9% in January). Inflation will remain volatile for the remainder of the year. However, the rebound reflects transient factors (calendar effects, VAT readjustments, oil) which will fade in 2022.

EMERGING ECONOMIES

China, in the mature phase of the «normalisation» process.

In Q2, GDP grew by a remarkable 7.9% year-on-year (in quarter-on-quarter terms, the growth stood at +1.3%). These figures are somewhat better than expected, attesting to the fact that the economy's underlying trend is one of solid growth. In this context, it may have come as a surprise that the latest indicators for industrial activity, economic sentiment and exports suggest a certain slowdown in Q3. However, in line with our comments at the beginning, this slowdown can be understood as a movement consistent with the transition towards more measured growth rates (albeit peppered with small episodes of shocks related to the pandemic in some areas), rather than as a shift of trend. This globally positive development leaves ample room for manoeuvre to relax the public stimuli, to continue with the «clean-up» of low-quality debts (a process which, after the pause during the pandemic, was resumed in Q4 2020) and to move ahead with the project of modernising the regulatory framework for big tech firms (a process which, it must be acknowledged, has been received with doubts in the markets).

Other emerging economies, at the tail end of the «normalisation» process. Unlike China, other major emerging economies, while making reasonable progress, are still far from plugging the whole in GDP opened up by the pandemic. That said, the figures for Q2 have been encouraging.

Specifically, in India GDP went from growing by just 1.6% year-on-year in Q1 2021 to 20.1% in Q2 2021. Although affected by the base effect, this latter figure also reflects the fact that the Delta variant has had a smaller final impact than initially feared. Turkey, meanwhile, registered an increase of 21.7% in its GDP in Q2, having grown by 7.2% year-on-year in Q1. As in the case of the Asian country, Turkey's recovery was sufficiently intense to offset the restrictions in force during part of the quarter (three-week lockdown). Finally, Brazil's GDP grew by 12.4% year-on-year in Q2, a clear improvement over the previous quarter's -1.0%. The outlook for the coming quarters is reasonably positive for all three countries, but in the case of Brazil there is concern regarding the increase in institutional confrontation, and in Turkey, excessive inflation (18.9% in July).

Germany: IFO business activity indicator Index (100 = 2015)



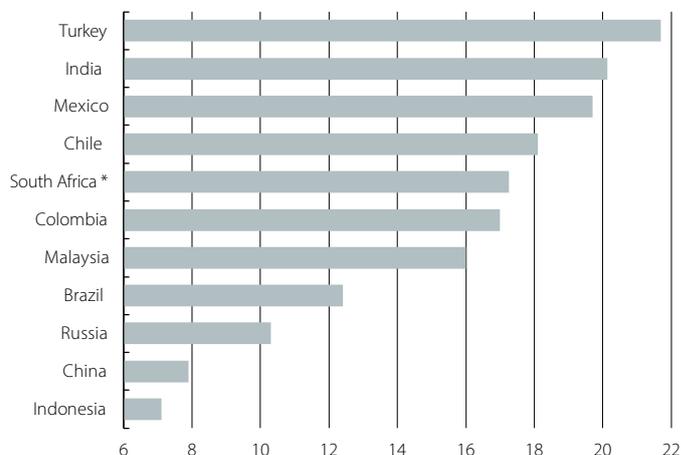
Source: CaixaBank Research, based on data from the Ifo Institute for Economic Research.

China: GDP Change (%)



Source: CaixaBank Research, based on data from the National Statistics Office of China.

Emerging economies: GDP of Q2 2021 Year-on-year change (%)



Note: * Forecasts.

Source: CaixaBank Research, based on data from national statistical institutes and internal forecasts.

The rise in commodity prices and its impact on inflation

The recovery of the global economy following the shock of the pandemic, in a context of abundant financial liquidity and a highly expansionary fiscal policy in the major developed countries, has favoured rising commodity prices. In the first two quarters of the year, Bloomberg's general commodity price index rallied more than 20%, largely driven by the rise in energy prices (44.5%), followed by the less pronounced but nevertheless important increase in agricultural goods (20.5%) and industrial metals (17.6%).

A few months ago we analysed the forces behind the rebound in commodity prices.¹ The main messages are still valid: the rally is due to a combination of demand-side factors (economic reopening, with a particularly strong revival in industry), supply-side factors (reduction in inventories) and financial elements (increased appetite for risk and depreciation of the dollar). In the current context, in which economic revival co-exists with rising inflationary pressures, we pose ourselves the questions: how are prices of final consumer goods affected by the rise in commodity costs, and what impact does this have on developed and emerging countries?

In advanced economies, the relative weight of the food and energy components in the consumer price index is usually relatively contained.² However, movements in energy and food prices are more erratic than in the other components, so they are generally excluded when measuring the underlying trends in prices in these economies. For the same reason, these fluctuations do not tend to have a decisive influence on medium-term inflation expectations, and this is what we have seen in recent months with the modest rise in inflation expectations (see second chart).³ The credibility and communications policy of the monetary authorities of both regions have also played a part by helping to anchor medium-term inflation expectations.

Beyond the direct impact that commodities have on the various components of consumer price indices, it is also important to assess potential indirect effects. As an example, a rise in oil prices not only affects the petrol

Commodity price index

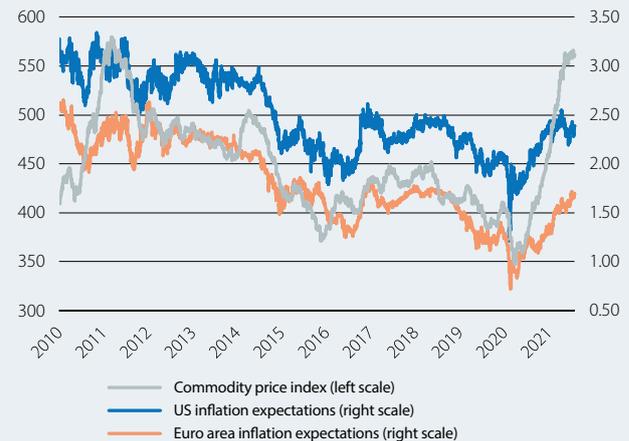
(100 = January 2020)



Source: CaixaBank Research, based on data from Bloomberg.

Inflation expectations and commodity prices

Index (%)



Note: Inflation expectations are represented by 5-year 5-year forward inflation rates. Source: CaixaBank Research, based on data from Bloomberg.

prices paid directly by consumers but also raises companies' production costs, which ultimately impacts the final prices of the goods and services that are produced. Thus, it is necessary to take into account how the cost of commodities contributes to the value added of final consumption goods and services. In developed economies, this contribution is low, ranging from 4% to 8% (see third chart), partly because of the prevalence of the services sector in their economic structures. The situation in emerging countries is quite different, as their production and consumption models are more commodity-intensive. We therefore find that emerging Asia, for instance, is more exposed to commodity prices than the euro area or the US.

Moreover, in emerging countries energy and food have a higher relative weight in consumer price indices than

1. See the Focus «Commodities: the resurgence of a market in the midst of the global recession» in the MR02/2021.

2. For example, in the US CPI, energy accounts for 7% of the total, while food represents around 15%. In the euro area, these components have a slightly higher relative weight (10% for energy and 20% for food).

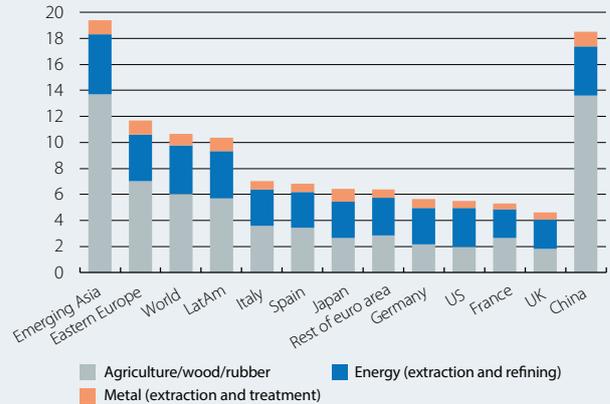
3. In addition, much of the aligned movement shown in the chart is due to other factors. For example, since mid-2020, the economic reopening has favoured both a rebound in commodity prices and a recovery in inflation expectations.

in developed economies. Specifically, food accounts for more than 25% of the total index in Brazil and Turkey, while in Russia it accounts for 36% and in India, around 40%. In other words, emerging countries are often more vulnerable to food price rallies, which means that rising food prices affect headline inflation more directly than in developed economies.

The rise in prices of agricultural goods (mainly maize, wheat, soya and livestock) which occurred during Q2 this year was linked to temporary supply barriers (such as droughts, insect plagues and livestock diseases), but it highlighted the sensitivity of many emerging countries to food inflation and the risks that could materialise in the event of a sustained price rally. On the one hand, the rise in inflation, and in particular in the prices of essential goods, deals a heavy blow to consumers' disposable income in many of these countries (which is already low). In some cases, it can even fuel the risk of social discontent, as happened in the Arab Spring (2010-2012). On the other hand, these economies' monetary authorities do not enjoy the same credibility among investors as the Fed or the ECB, so they can be forced to act more easily.

The nature of the imbalances observed in the supply of several of these commodities is a response to transitory conditions, so their effect ought to fade over time and should not justify any major shifts in the monetary conditions of many emerging countries. However, since the beginning of the year, one third of emerging countries have inflation rates higher than their central banks' inflation rate target (such as Turkey, Russia, Brazil, Mexico, Nigeria, Hungary and Poland), and

Contribution of commodities to the value added of final consumption goods and services (%)



Source: CaixaBank Research, based on data from the OECD and Capital Economics.

in many cases those high rates are exacerbated by the weakness of their foreign exchange rates. It is in these circumstances that new episodes of surging commodity prices, particularly in agricultural products, could not only trigger rising consumer prices but also a hasty tightening of financial conditions which could hinder the economic recovery.

Beatriz Villafranca

Year-on-year (%) change, unless otherwise specified

UNITED STATES

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Activity									
Real GDP	2.3	-3.4	-2.9	-2.3	0.5	12.2	-	-	-
Retail sales (excluding cars and petrol)	4.0	2.1	5.4	4.7	11.9	26.1	16.6	13.8	...
Consumer confidence (value)	128.3	101.0	93.1	93.8	99.1	122.1	128.9	125.1	113.8
Industrial production	-0.8	-7.2	-6.7	-4.3	-1.6	14.6	9.9	6.6	...
Manufacturing activity index (ISM) (value)	51.2	52.5	55.0	59.0	61.4	60.8	60.6	59.5	59.9
Housing starts (thousands)	1,295	1,396	1,440	1,575	1,599	1,586	1,650	1,534	...
Case-Shiller home price index (value)	217	228	229	239	249	262	267	...	...
Unemployment rate (% lab. force)	3.7	8.1	8.8	6.8	6.2	5.9	5.9	5.4	...
Employment-population ratio (% pop. > 16 years)	60.8	56.8	56.1	57.4	57.6	58.0	58.0	58.4	...
Trade balance ¹ (% GDP)	-2.7	-3.2	-2.9	-3.2	-3.6	-3.7	-3.7	...	...
Prices									
Headline inflation	1.8	1.2	1.2	1.2	1.9	4.8	5.4	5.4	...
Core inflation	2.2	1.7	1.7	1.6	1.4	3.7	4.5	4.3	...

JAPAN

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Activity									
Real GDP	0.0	-4.7	-5.5	-0.9	-1.3	7.6	-	-	-
Consumer confidence (value)	38.9	31.1	30.5	33.0	33.3	35.4	37.4	37.5	36.7
Industrial production	-2.7	-10.6	-12.7	-4.2	-1.5	19.9	23.0	13.3	...
Business activity index (Tankan) (value)	6.0	-19.8	-27.0	-10.0	5.0	14.0	-	-	...
Unemployment rate (% lab. force)	2.4	2.8	3.0	3.0	2.8	2.9	2.9	2.8	...
Trade balance ¹ (% GDP)	-0.3	0.1	-0.3	0.1	0.3	...	0.7	0.9	...
Prices									
Headline inflation	0.5	0.0	0.0	-0.9	-0.5	-0.7	-0.4	-0.3	...
Core inflation	0.6	0.2	0.1	-0.4	0.0	-0.9	-0.8	-0.6	...

CHINA

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Activity									
Real GDP	6.0	2.3	4.9	6.5	18.3	7.9	-	-	-
Retail sales	8.1	-2.9	0.9	4.6	34.0	14.1	12.1	8.5	...
Industrial production	5.8	3.4	5.8	7.1	24.6	9.0	8.3	6.4	...
PMI manufacturing (value)	49.7	49.9	51.2	51.8	51.3	51.0	50.9	50.4	50.1
Foreign sector									
Trade balance ^{1,2}	421	527	444	525	623	611	611	607	...
Exports	0.5	3.6	8.4	16.6	48.9	30.7	32.2	19.3	...
Imports	-2.7	-0.7	3.7	5.6	29.0	43.4	36.7	28.1	...
Prices									
Headline inflation	2.9	2.5	2.3	0.1	0.0	1.1	1.1	1.0	...
Official interest rate ³	4.2	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Renminbi per dollar	6.9	6.9	6.9	6.6	6.5	6.5	6.4	6.5	6.5

Notes: 1. Cumulative figure over last 12 months. 2. Billion dollars. 3. End of period.

Source: CaixaBank Research, based on data from the Department of Economic Analysis, Bureau of Labor Statistics, Federal Reserve, Standard & Poor's, ISM, National Bureau of Statistics of Japan, Bank of Japan, National Bureau of Statistics of China and Refinitiv.

EURO AREA

Activity and employment indicators

Values, unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Retail sales (year-on-year change)	2.4	-0.9	2.5	1.6	2.5	12.3	5.0	...	...
Industrial production (year-on-year change)	-1.3	-8.6	-6.9	-1.4	3.5	23.3	9.7	...	...
Consumer confidence	-7.0	-14.3	-14.4	-15.6	-13.7	-5.5	-3.3	-4.4	-5.3
Economic sentiment	103.7	88.2	88.5	91.4	95.3	114.3	117.9	119.0	117.5
Manufacturing PMI	47.4	48.6	52.4	54.6	58.4	63.1	63.4	62.8	...
Services PMI	52.7	42.5	51.1	45.0	46.9	54.7	58.3	59.8	...
Labour market									
Employment (people) (year-on-year change)	1.2	-1.6	-2.1	-1.8	-1.9	...	-	-	...
Unemployment rate (% labour force)	7.6	7.9	8.5	8.2	8.1	8.0	7.8	7.6	...
Germany (% labour force)	3.2	3.9	4.1	4.1	3.9	3.7	3.7	3.6	...
France (% labour force)	8.4	8.0	8.9	8.0	8.0	8.2	8.0	7.9	...
Italy (% labour force)	10.0	9.3	10.0	9.8	10.1	9.8	9.4	9.3	...
Real GDP (year-on-year change)	1.4	-6.5	-4.0	-4.6	-1.3	13.6	-	-	-
Germany (year-on-year change)	1.1	-4.9	-3.7	-2.9	-3.1	9.4	-	-	-
France (year-on-year change)	1.8	-8.0	-3.6	-4.3	1.5	18.7	-	-	-
Italy (year-on-year change)	0.3	-8.9	-5.2	-6.5	-0.7	17.3	-	-	-

Prices

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
General	1.2	0.3	0.0	-0.3	1.1	1.8	1.9	2.2	3.0
Core	1.0	0.7	0.6	0.2	1.2	0.9	0.9	0.7	1.6

Foreign sector

Cumulative balance over the last 12 months as % of GDP of the last 4 quarters, unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Current balance	2.5	2.3	2.2	2.3	2.7	2.8	2.9	...	...
Germany	7.4	7.0	6.8	7.0	7.1	7.3	7.5	...	...
France	-0.3	-1.9	-1.5	-1.9	-1.7	-1.6	-1.4	...	...
Italy	3.2	3.5	3.4	3.5	3.5	3.9	3.9	...	...
Nominal effective exchange rate¹ (value)	92.3	93.8	95.4	95.5	95.3	94.9	94.5	94.2	93.9

Credit and deposits of non-financial sectors

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Private sector financing									
Credit to non-financial firms ²	3.8	6.3	7.1	7.0	6.4	2.3	1.8	1.7	...
Credit to households ^{2,3}	3.4	3.2	3.1	3.2	3.1	3.9	4.0	4.2	...
Interest rate on loans to non-financial firms ⁴ (%)	1.2	1.2	1.3	1.3	1.1	1.2	1.2	1.3	...
Interest rate on loans to households for house purchases ⁵ (%)	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.4	...
Deposits									
On demand deposits	8.0	12.9	14.1	15.2	16.1	12.3	12.2	11.3	...
Other short-term deposits	0.3	0.6	1.0	1.4	1.0	-0.6	-1.4	-1.8	...
Marketable instruments	-1.9	9.6	10.2	17.5	12.6	9.9	8.6	7.7	...
Interest rate on deposits up to 1 year from households (%)	0.3	0.2	0.2	0.2	0.2	0.2	0.1	0.2	...

Notes: 1. Weighted by flow of foreign trade. Higher figures indicate the currency has appreciated. 2. Data adjusted for sales and securitization. 3. Including NPISH. 4. Loans of more than one million euros with a floating rate and an initial rate fixation period of up to one year. 5. Loans with a floating rate and an initial rate fixation period of up to one year.

Source: CaixaBank Research, based on data from the Eurostat, European Central Bank, European Commission, national statistics institutes and Markit.

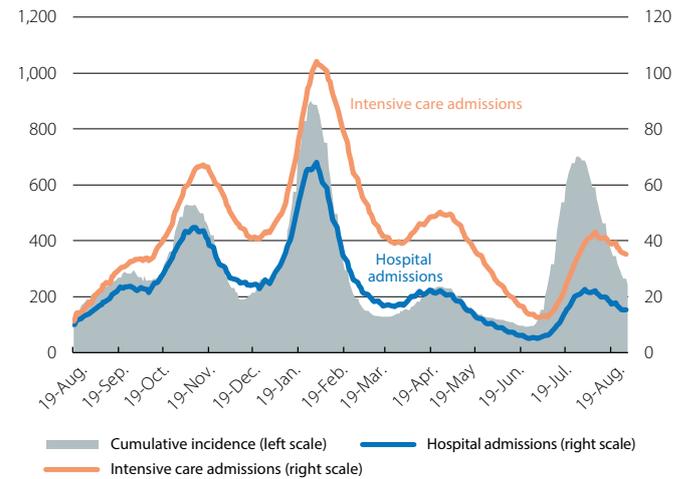
The vaccines curb the impact of the Delta variant in Spain

Economic activity continues to recover in the early stages of the second semester despite the rise in infections. Just as the first semester was coming to an end and we were rounding off these same lines of the July report, the bad news on the epidemiological front was confirmed: the more infectious Delta variant of the coronavirus, together with the easing of restrictions on activity and individual precautionary measures, led to a surge in infections on a dizzying scale. In one month, the 14-day cumulative incidence of cases was multiplied by 7, from 100 to 700. However, the rapid roll-out of the vaccines has prevented the worst and managed to keep hospital pressure contained and mortality levels well below the first waves of the pandemic without the need to impose any severe additional restrictions. The notable progress in the vaccination roll-out, with an average weekly rate in excess of 6,000 inoculations per 100,000 inhabitants throughout the summer season, has led to some 70% of the population being immunised as of the end of August.

The recovery consolidates in the summer following the rally in economic activity in Q2. Following a stagnation of the recovery in the previous two quarters as a consequence of the second and third waves of the pandemic, GDP rose by a solid 2.8% quarter-on-quarter in Q2, placing the economy 6.8% below its pre-crisis level. As the restrictions on activity were lifted and the vaccination campaign progressed, private consumption began to recover sharply, registering 6.6% quarter-on-quarter growth in Q2 and reducing its shortfall compared to Q4 2019 to 4.0%. On the other hand, more moderate growth in investment (1.5% quarter-on-quarter) and the rebound in imports slowed the pace of recovery. The available activity indicators indicate that this recovery has gathered strength in Q3: in July and August, the PMI indices for both manufacturing and services remain markedly above the 50-point threshold that separates contraction from expansion, serving as a sign of the robustness of the economic recovery underway. CaixaBank's consumption indicator rose by 6% in July and by 13% in August, supported by a very solid trend in foreign card spending (-34% and -19% in July and August, respectively, relative to the same period in 2019, compared to -57% in Q2). Following the encouraging GDP figure for Q2 and the strength of the Q3 indicators, we revised our GDP growth forecast for 2021 up to 6.3%.

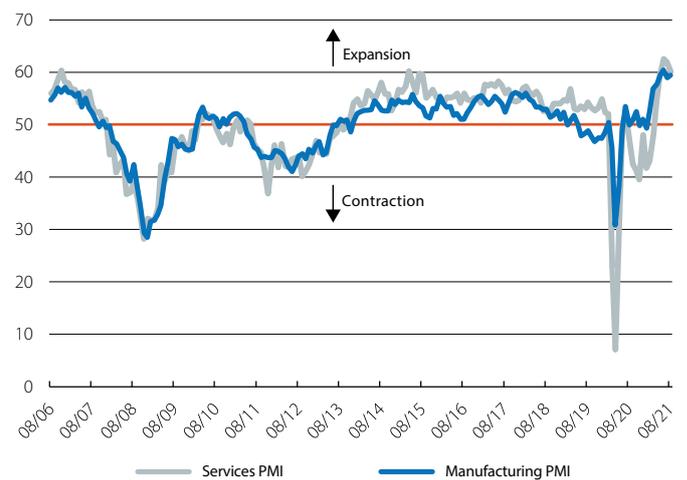
The recovery of the labour market continues as it approaches pre-pandemic levels. The number of people registered with Social Security fell in August by 118,004 people. That said, this is a month in which there is usually some destruction of the jobs filled in the preceding months for the summer season. Correcting for seasonality, there is an increase of 76,541 people in the number of people registered, marking the fourth month in a row with a rise in employment. The seasonally adjusted number of registered workers thus rises to 19,477,505, practically the level of February 2020. In addition, since March there has been a steady reduction in the number of workers affected by ERTE furlough schemes, and by the end of August

Spain: incidence of cases and hospital pressure
(14-day cumulative incidence) *Per 100,000 inhabitants*
Per million inhabitants



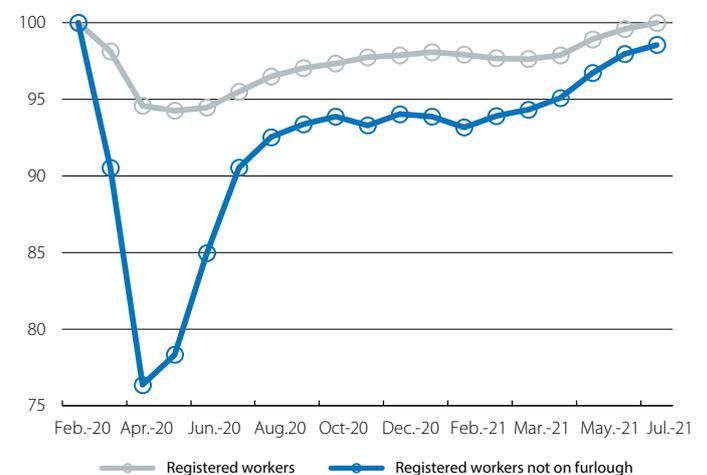
Source: CaixaBank Research, based on data from the Ministry of Health.

Spain: economic activity indicators
Level



Source: CaixaBank Research, based on data from Markit.

Spain: workers registered with Social Security
Monthly average (100 = February 2020)



Source: CaixaBank Research, based on data from the Ministry for work, migration and social security (MITRAMISS).

this number had fallen to 272,190 people. Thus, the seasonally adjusted number of registered workers net of furlough schemes is a mere 280,000 people below the pre-pandemic level (February 2020). Furthermore, in Q3 to date there has been 3% growth over the previous quarter, suggesting an intensification of the recovery of GDP.

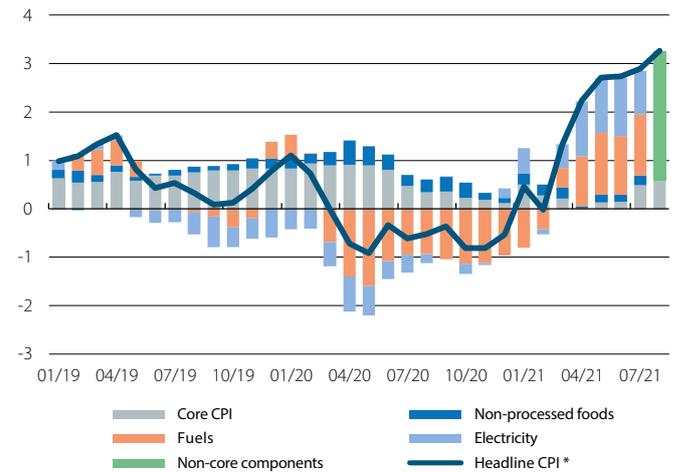
Inflation, affected by temporary factors. The CPI registered a year-on-year change of 2.9% in July and of 3.3% in August. In an environment with inflation at its highest levels since 2012, core inflation is also beginning to pick up. Between June and August it rose by around 0.5 pps to 0.7%, as a result of the rebound in the price of services, particularly in hospitality. The rally in the price index in the first eight months of the year has largely been driven by rising energy prices, especially electricity. The average daily price of electricity in the wholesale market reached 58.6 euros in the first half of the year (compared to an average of 47.7 euros in 2019) and 99.2 euros in July and August, so further upside surprises in the energy component cannot be ruled out. Given the more persistent than expected rise in electricity prices, we have revised our inflation forecast for 2021 up to 2.4%. Looking ahead to the next few months, the key lies in the behaviour of core inflation as the economy steps up a gear.

The external balance, affected by the collapse of tourism, but with a good outlook. The current account balance stood at 6,817 million euros in June 2021, or 0.6% of GDP, compared to 17,610 million euros in June 2020 (or 1.5% of GDP). Although the balance of goods has broadly fared better than in 2020, as has the income balance, these contributions have not been able to offset the deterioration in the balance of services. Most notably, the collapse in tourism deducted some 23,900 million euros from the current account balance over the past year. Nevertheless, following a first half of the year which was still very weak for the tourism sector, with international tourism spending falling by 86% between January and June compared to the same period in 2019, the outlook for the summer months has significantly improved. Some more recent data available for July indicate that overnight stays in hotels lie 39% below those of July 2019 (-62% in June), sustained by a robust recovery of both national travellers to the levels of July 2019 (-23% in June) and also tourists from the EU (-45%, compared to -68% in June). CaixaBank's internal card payment data also show strong growth in tourism spending in both July and August.

The public finances, infected by the pandemic while the deficit begins to be corrected. The unprecedented intervention of the state to protect households and businesses from the most devastating economic effects of the pandemic continues to be reflected in the public finances, with general government debt reaching 1,426 million euros in June (+10.4% year-on-year), or 122.1%. However, signs are appearing of a correction of the public deficit, and in the first half of the year the state registered a deficit of 3.0% of GDP, representing a 1.3-pp improvement compared to 2020. This result is essentially due to a robust 15% growth in tax revenues compared to the previous year, while expenditure fell by 0.1%. Although the pandemic continues to affect the dynamics of public debt, the cost of debt is expected to remain low, aided by the ECB's dovish monetary policy.

Spain: evolution of the CPI

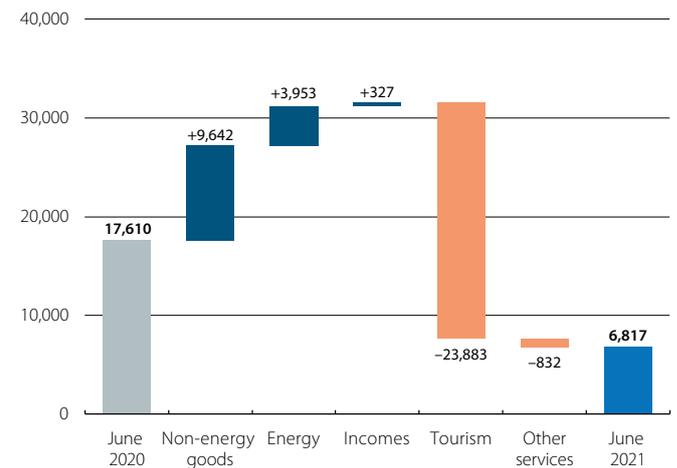
Contribution to the year-on-year change (pps)



Note: * Year-on-year change.
Source: CaixaBank Research, based on data from the National Statistics Institute.

Spain: evolution of the current account

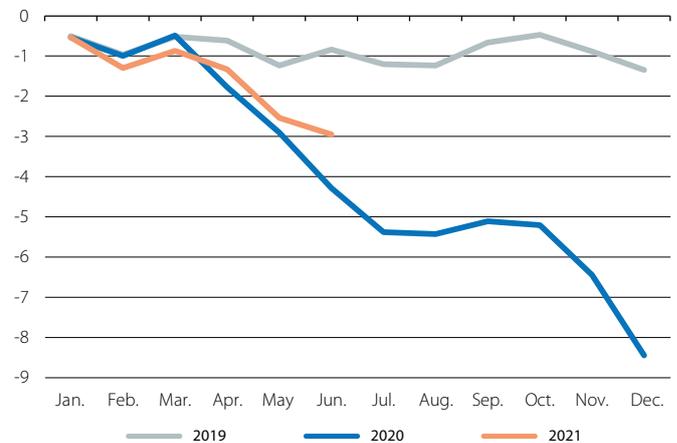
12-month cumulative balance (EUR millions)



Source: CaixaBank Research, based on data from the Bank of Spain.

Spain: state financing capacity/needs

(% of GDP)



Source: CaixaBank Research, based on data from the General Comptroller of the State Administration (IGAE).

Pent-up demand: one of the main drivers of the economic recovery

Spanish households amassed significant savings in 2020 in the context of the COVID-19 pandemic. These savings will materialise in the form of consumption during 2021, making pent-up demand one of the drivers of the post-pandemic economic recovery.

How were these savings generated? As a result of a fall in consumption that was much greater than that of gross disposable income (GDI). In 2020, the former plummeted by 12%, mainly due to the inability to consume during the lockdown and the closure of establishments, whereas GDI fell by just 3.3%. The remarkable resilience shown by GDI in 2020 (in comparison, GDP fell by 10.8%) was largely due to the shock-absorbing effect of social benefits (see first chart). These trends have persisted so far this year, but the decline in both variables has moderated as activity has been revived.

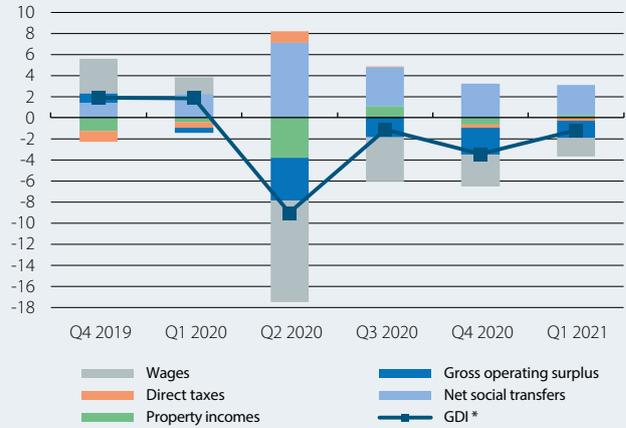
What do the figures look like? Total gross household savings rose from 48 billion euros in 2019 to almost 109 billion in 2020, and we estimate that excess savings amounted to some 45 billion euros (4.0% of GDP).¹ In Q1 2021, Spanish households saved 10.6% of their gross disposable income,² which is higher than the pre-pandemic figure of around 6.0% but a far cry from the 25.7% peak reached in Q2 2020.

As the restrictions on mobility and activity have been eased, households have reactivated their levels of consumption and have reduced savings for precautionary reasons. In fact, the latest macroeconomic data show that consumption is experiencing a strong revival. GDP growth in Q2 2021 was driven almost entirely by the marked recovery in private consumption, which grew by 6.6% quarter-on-quarter. Not only is this a very strong rate but it is also higher than the historical sensitivity to GDP would have suggested. This rally indicates a sharp reduction in the savings rate in Q2. Looking ahead, it should be borne in mind that private consumption is still 4.0% below the level of Q4 2019, so there is still room for significant growth rates over the coming quarters.

There are two factors which suggest that the support that pent-up savings provide for the economy will continue to grow; (i) Spain could be one of the developed countries where this support is greatest: as shown in the third chart, during the pandemic it registered one of the biggest savings rate increases in Europe and (ii) much of the savings have been concentrated in deposits (as opposed to being used to reduce debt). In particular,

1. We defined «excess savings» as the differential between the savings that occurred in 2020 and those that would have occurred if, with the gross disposable income observed in 2020, households had maintained the savings rate which we had projected before the pandemic for 2020.
2. Quarterly static figure corrected for seasonality and calendar effects.

Spain: household disposable income
Contribution to year-on-year change (pps)



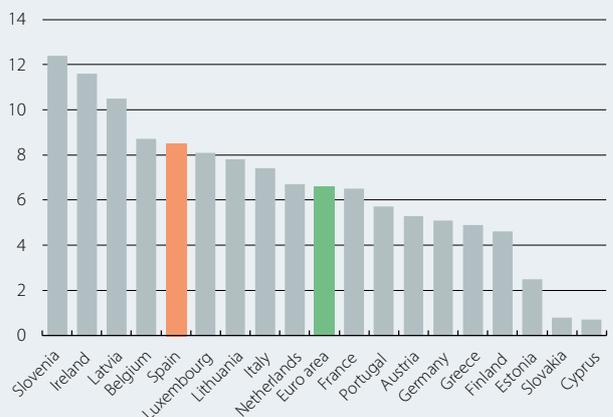
Note: * Year-on-year change.
Source: CaixaBank Research, based on data from the National Statistics Institute.

Spain: savings rate
(% of gross disposable income)



Note: Quarterly data with a series corrected for seasonality and calendar effects.
Source: CaixaBank Research, based on data from the National Statistics Institute.

Euro area: increase in the savings rate
Increase in 2020 versus 2019 (pps)



Source: CaixaBank Research, internal analysis based on data from Eurostat.

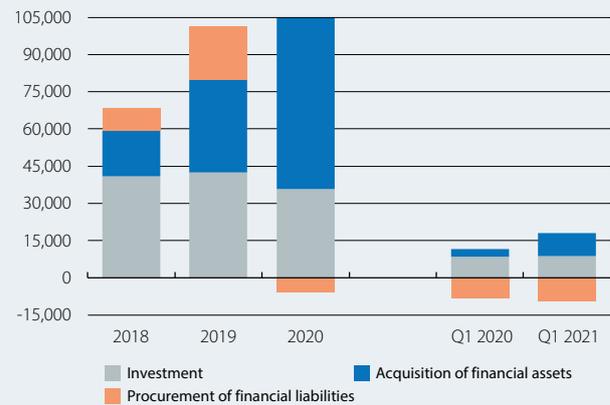
in 2020 the majority of savings were used to purchase financial assets (65%, largely deposits), while the portion allocated to investment (30%), mostly housing, and debt reduction (5%) were somewhat lower. However, the effect of pent-up demand could be mitigated both by the fact that some of the excess savings will be retained for precautionary reasons and, above all, if those savings have been concentrated among high earners, since high-income groups have a lower propensity for consumption than low-income groups.

All in all, the savings rate is likely to continue to decline during the course of the year – it could go from 14.7% in 2020 to levels well below 10% in 2021 – while the rebound in consumption, driven by this pent-up demand and the lifting of restrictions as the vaccination campaign is completed, looks set to be one of the pillars of the recovery. Not in vain, we expect the rebound in real private consumption in 2021 to be around 10% year-on-year (having fallen by 12.4% in 2020) and well over 4.5% in 2022.

Javier Garcia-Arenas

Destination of household savings

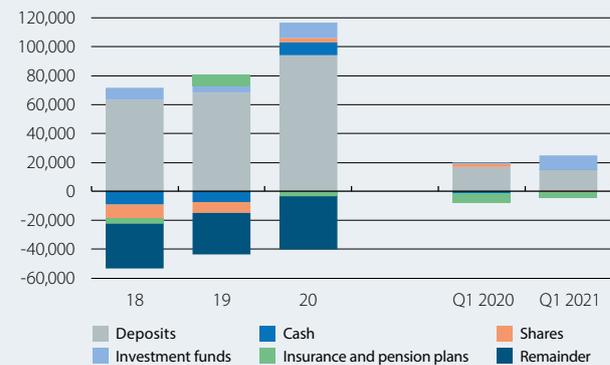
(EUR millions)



Source: CaixaBank Research, based on data from the Bank of Spain.

Spain: distribution of the net acquisition of financial assets

(EUR millions. Flows)



Note: The remainder includes non-transferable deposits, other holdings and commercial loans.
Source: CaixaBank Research, based on data from the Bank of Spain.

Activity and employment indicators

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Industry									
Industrial production index	0.7	-9.5	-5.4	-2.3	3.1	28.2	11.1	...	...
Indicator of confidence in industry (value)	-3.9	-14.0	-11.9	-11.0	-7.3	2.5	0.2	2.1	1.4
Manufacturing PMI (value)	49.1	47.5	51.4	51.1	53.0	59.2	60.4	59.0	59.5
Construction									
Building permits (cumulative over 12 months)	17.2	-12.8	-19.1	-19.9	-19.1	...	...	...	...
House sales (cumulative over 12 months)	3.6	-12.6	-17.6	-17.4	-17.6	0.3	9.0	...	...
House prices	5.1	2.1	1.7	1.5	0.9	...	-	-	-
Services									
Foreign tourists (cumulative over 12 months)	1.4	-36.9	-50.9	-72.7	-85.5	-81.3	-75.8	-68.2	...
Services PMI (value)	53.9	40.3	47.3	43.0	44.3	58.8	62.5	61.9	60.1
Consumption									
Retail sales	2.3	-7.1	-3.5	-3.0	-0.4	20.5	1.2	0.1	...
Car registrations	-3.6	-29.2	-7.5	-13.2	12.7	661.0	17.1	-28.9	-28.9
Consumer confidence index (value)	-6.3	-22.8	-26.9	-26.3	-22.1	-11.1	-11.7	-10.2	-8.5
Labour market									
Employment ¹	2.3	-2.9	-3.5	-3.1	-2.4	5.7	-	-	-
Unemployment rate (% labour force)	14.1	15.5	16.3	16.1	16.0	15.3	-	-	-
Registered as employed with Social Security ²	2.6	-2.0	-3.0	-2.0	-1.4	3.9	4.7	4.3	3.6
GDP	2.0	-10.8	-8.6	-8.9	-4.2	19.8	-	-	-

Prices

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
General	0.7	-0.3	-0.5	-0.7	0.6	2.6	2.7	2.9	3.3
Core	0.9	0.7	0.5	0.2	0.4	0.1	0.2	0.6	...

Foreign sector

Cumulative balance over the last 12 months in billions of euros, unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Trade of goods									
Exports (year-on-year change, cumulative over 12 months)	1.8	-10.0	-8.9	-10.0	-8.1	8.7	8.7	...	...
Imports (year-on-year change, cumulative over 12 months)	1.0	-14.7	-13.3	-14.7	-14.0	3.3	3.3	...	...
Current balance	26.6	7.7	11.5	7.7	6.1	6.0	6.0	...	...
Goods and services	37.5	16.8	20.3	16.8	15.2	15.0	15.0	...	...
Primary and secondary income	-10.9	-9.0	-8.8	-9.0	-9.1	-9.0	-9.0	...	...
Net lending (+) / borrowing (-) capacity	30.8	12.7	16.3	12.7	11.0	11.8	11.8	...	...

Credit and deposits in non-financial sectors³

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Deposits									
Household and company deposits	5.4	7.5	9.0	8.7	8.9	4.9	4.7	4.7	...
Sight and savings	10.7	12.3	13.8	13.7	14.1	9.2	8.9	9.0	...
Term and notice	-13.4	-16.5	-16.5	-17.1	-20.4	-23.5	-24.0	-24.7	...
General government deposits	8.8	1.0	5.2	11.8	11.2	16.3	18.1	11.6	...
TOTAL	5.6	7.1	8.7	8.9	9.1	5.6	5.4	5.2	...
Outstanding balance of credit									
Private sector	-1.5	1.2	2.0	2.4	2.3	-0.4	-0.6	-0.5	...
Non-financial firms	-3.4	4.9	7.1	7.9	7.8	-0.7	-1.5	-1.4	...
Households - housing	-1.3	-1.8	-1.8	-1.5	-1.0	0.0	0.4	0.7	...
Households - other purposes	3.2	0.8	0.3	-0.1	-1.8	-0.7	-0.9	-1.4	...
General government	-6.0	3.0	1.1	8.8	9.5	17.4	19.2	22.6	...
TOTAL	-1.7	1.3	1.9	2.7	2.7	0.6	0.5	0.9	...
NPL ratio (%)⁴	4.8	4.5	4.7	4.5	4.5	4.5	4.4	...	...

Notes: 1. Estimate based on the Active Population Survey. 2. Average monthly figures. 3. Aggregate figures for the Spanish banking sector and residents in Spain. 4. Period-end figure.

Source: CaixaBank Research, based on data from the Ministry of Economy, the Ministry of Public Works, the Ministry of Employment and Social Security, the National Statistics Institute, the State Employment Service, Markit, the European Commission, the Department of Customs and Special Taxes and the Bank of Spain.

The Portuguese economy reacts to the lifting of the lockdown and approaches pre-pandemic levels

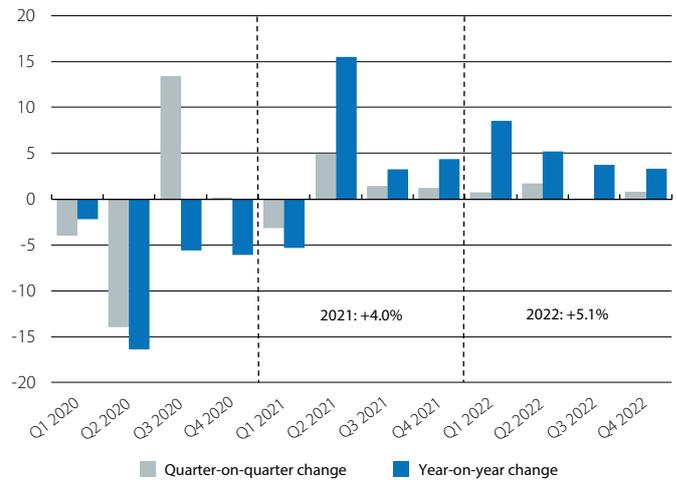
The gradual return to normality stimulates the economy in Q2. Despite the predominance of the more contagious Delta variant, the number of new infections remained controlled in Q2. This, together with progress in the vaccination campaign, allowed the gradual reopening of the economy to continue without further shocks. In this context, GDP grew by 4.9% quarter-on-quarter in Q2 (15.5% year-on-year), reducing the gap compared to pre-pandemic levels (4.6% below the level of GDP at the end of 2019). The recovery was boosted by domestic demand, especially private and public consumption, which on the whole have already slightly exceeded pre-pandemic levels. Investment, in contrast, fell by 2.1% quarter-on-quarter, although in the context of the pandemic this is not all bad news, since investment still exceeds the levels of 2019 by 2.3%. Finally, the less negative contribution from external demand facilitated the improvement in growth in Q2, although exports and imports remain well below those recorded at the end of 2019 (18.3% and 6.8%, respectively).

The available indicators confirm that the economy continues to perform well in Q3. The Bank of Portugal's daily activity indicator suggests that economic activity grew by around 4.0% year-on-year up until mid-August, while the coincident economic activity indicator accelerated in July to 2.8%. In the same month, electronic payments and cash withdrawals at ATMs increased to 86 billion euros, up 3.6% versus July 2019 and equalling the value of December 2019. On the other hand, there were 9,961 aircraft departures from Portuguese airports, far above the average of 6,100 registered in July and August 2020. We expect the economy to continue to grow over the coming months, albeit at a more contained rate than in Q2, placing growth for the year as a whole at 4.0%, a revision of 3 decimal points up from our previous forecast.

Driven by the public sector, employment surpasses pre-pandemic levels in Q2. Employment increased by 2.8% quarter-on-quarter in Q2, exceeding the levels of the end of 2019. However, the recovery in employment was uneven between sectors: for instance, in education, public administration and ICT, it exceeded the level of Q4 2019 (+147,400 jobs), while in the accommodation and catering sector it remained substantially below the level recorded before the pandemic (-83,800 jobs). The impact of public employment is particularly relevant: not counting the more than 731,000 civil servants, employment remains 0.2% below the levels of the end of 2019. Despite this, the signs are still

Portugal: evolution of GDP

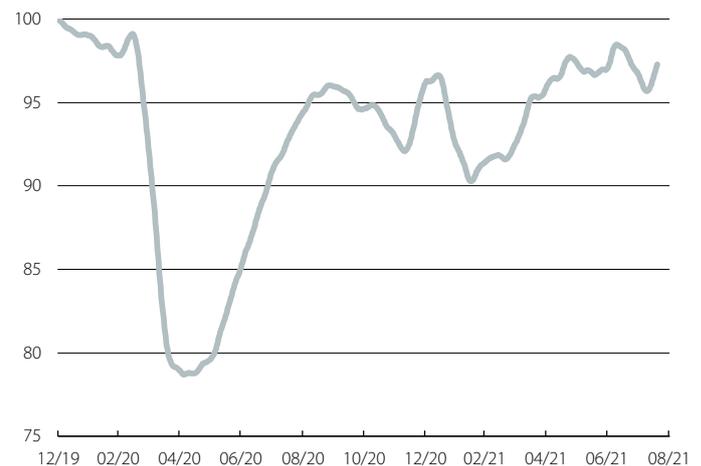
Change (%)



Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal and own forecasts.

Portugal: daily economic activity indicator

Index (100 = December 2019)

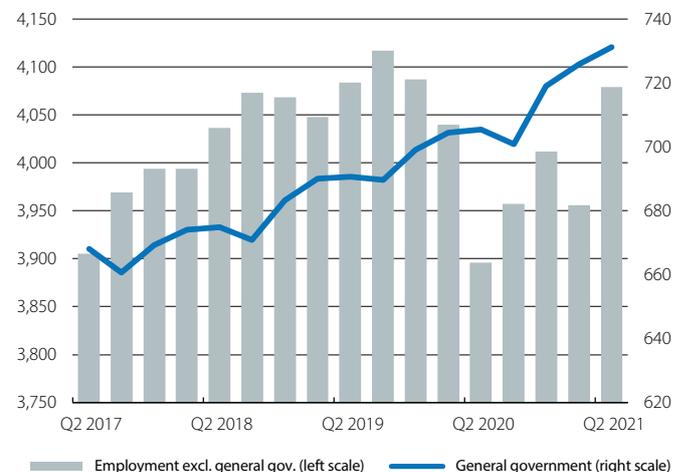


Source: CaixaBank Research, based on data from the Bank of Portugal.

Portugal: employed population

(Thousands of people)

(Thousands of people)



Source: CaixaBank Research, based on data from the DGAEP and the National Statistics Institute of Portugal.

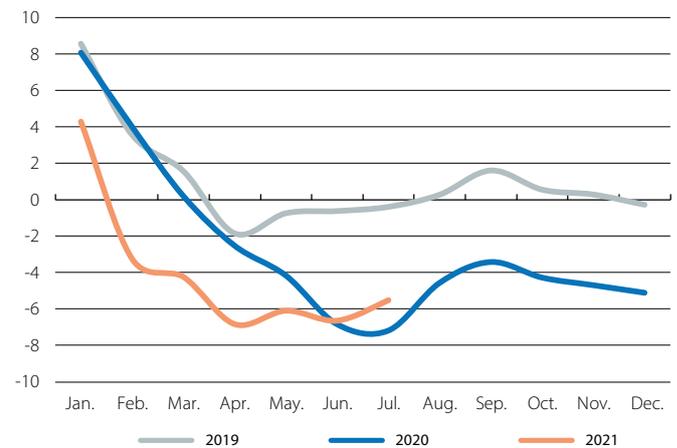
positive: in July, the unemployment rate reached 6.6% and employment exceeded the levels of July 2019. However, uncertainty will persist in the second half of the year, and much will depend on the success of tourism activity in the summer and the resumption of activity in the various economic sectors in a context which is still marked by the pandemic, a shortage of some commodities and a rise in the price of inputs.

The public accounts improve thanks to the normalisation of economic activity and base effects. In the year to date up until July, the general government deficit has stood at 5.5% of GDP, compared to 7.2% over the same period of the previous year. This improved performance is due to the normalisation of economic activity and the reduced impact of the deferral of tax payments. In this context, revenues increased 8.0% year-on-year, while expenditure rose 3.7%. Current transfers continued to account for much of the increase in spending, owing to the support being provided to businesses and employment. In all, the measures aimed at combating the COVID-19 crisis accounted for 2.9% of GDP up to July, with those aimed at supporting the resumption of economic activity, employment and health standing out.

The external accounts marginally deteriorated in June. The current account deficit deteriorated to -0.7% of GDP (-0.6% in May). This was due to the increased deficit in the balance of goods, driven by the non-energy component. The tourism balance, meanwhile, continued to recover despite still being far from its pre-pandemic levels (-67.7% compared to June 2019). For 2021, we estimate an annual growth of 25% in tourism, while the pre-pandemic tourism levels for non-resident tourists visiting from Europe are not expected to be recovered until 2022.

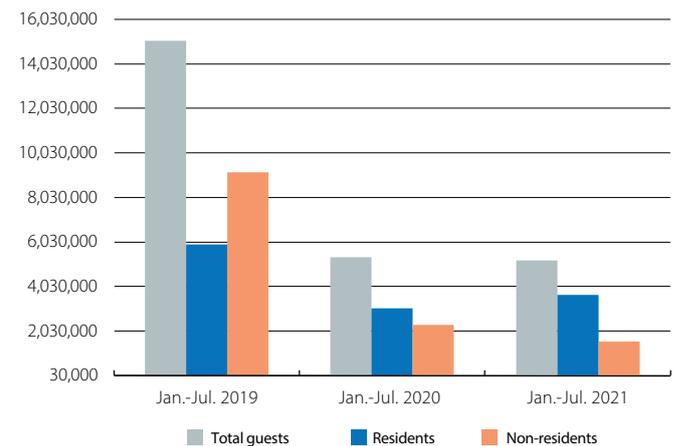
The stock of non-financial private sector credit continues to grow, largely due to moratoria. The stock of loans to private individuals grew by 3.0% in July. This improvement is explained by the buoyancy of housing credit, as consumer credit is recovering more gradually. Loans to businesses, meanwhile, grew by 6.9% year-on-year. The moratoria in place in this segment are key. Specifically, in July there were 36,801 million euros in loans under moratorium, more than 18% of the stock of loans to the non-financial private sector. Moratoria are particularly relevant in the case of non-financial firms, where they represented 28.8% of the stock of loans. Among sectors, accommodation and catering, the processing industry, and construction and real estate activities stand out. In order to mitigate the potential negative impact of the moratoria coming to an end, the state will guarantee 25% of the loans under moratorium that were initially renegotiated with the banks. Their end on September 30, in a context still marked by uncertainty and an incomplete resumption of economic activity, could increase the risk of defaults.

Portugal: general government balance *
(% of GDP)



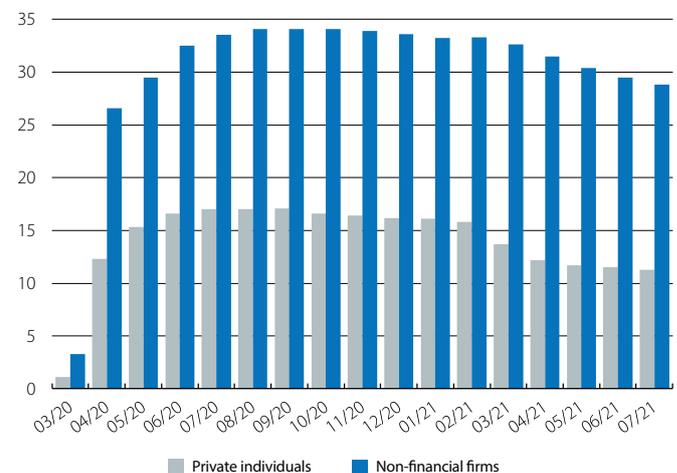
Note: * Public accounting data.
Source: CaixaBank Research, based on data from the General Comptroller of the State Administration (DGO).

Portugal: number of guests versus before the pandemic
(Number of guests, year to date)



Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal.

Portugal: loans under moratorium
(% of the total loans of each segment)



Source: CaixaBank Research, based on data from the Bank of Portugal.

Portuguese investment shines in a year marked by the pandemic

Investment is a key variable which determines productive capacity, helps to boost productivity and economic growth, and supports wealth generation in the medium term. The recent trends in Portuguese investment, having performed well since 2016 as well as holding up during the pandemic, are thus very promising. Specifically, while GDP shrunk by 7.6% in 2020, investment barely fell by 1.8%, and in Q1 2021 GDP dropped by 5.3% year-on-year (-3.2% quarter-on-quarter), but investment rose by 4.1% (+3.4% quarter-on-quarter), placing it 4.5% above the pre-pandemic level. Thus, in early 2021 investment (gross fixed capital formation, or GFCF) represented around 20% of GDP – the highest level since 2010, albeit still far from the peaks of the early 2000s.

The composition of investment during the pandemic

Investment in the construction sector made a significant contribution to the resilience of GFCF (including residential construction, but more particularly other types). Investment in machinery and equipment also registered a strong recovery after falling in the first three quarters of 2020, and in Q1 2021 it stood more than 8% above the pre-pandemic level.

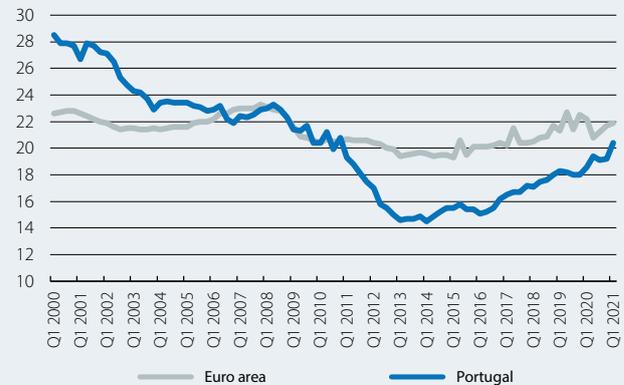
By institutional sector, the data show that the good performance of investment during the pandemic is largely explained by public investment. In particular, the state carried out a number of investments necessary to combat the pandemic, such as the purchase of healthcare equipment as well as computer products as part of the programmes to boost digital literacy. Moreover, investment in public works, which in recent years had been weaker because of the need for budgetary consolidation, showed a better tone and was driven by the proximity of municipal elections (October 2021). Other public investments, such as purchases of equipment related to the Lisbon metro, have also helped to counter the weakness of GFCF in the private sector. Household investment also held up well, possibly aided by the favourable financial conditions which are incentivising people to buy homes.¹

On the other hand, it is also important to analyse the trend in foreign direct investment (FDI), as this is indicative of an economy's attractiveness and competitiveness. However, FDI does not always translate into a real increase in gross fixed capital formation. In fact, between the end of 2019 and

1. With data up to May, the volume of loans granted to residents for home purchases has grown by more than 30%.

Portugal: gross fixed capital formation (GFCF)

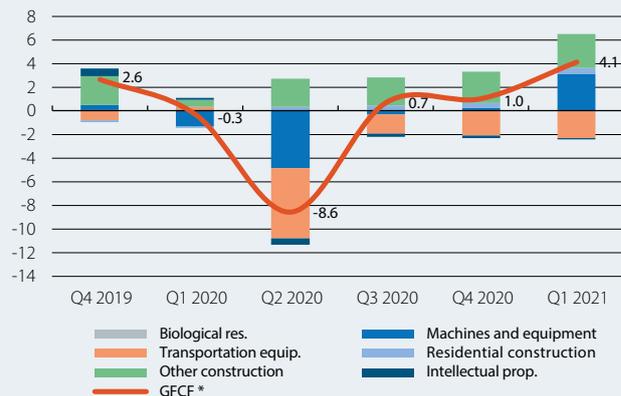
(% of GDP)



Source: CaixaBank Research, based on data from Eurostat.

Portugal: GFCF and contribution by activity

Contribution to year-on-year change (pps)



Note: * Year-on-year change (%).

Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal.

Q1 2021 in Portugal, the volume of FDI² increased by 4 billion euros, a rise of 2.7%. That said, much of this increase corresponds to mergers and acquisitions, which merely reflect transfers of ownership do not translate into an increase in investment as measured by the national accounts.³

2. In addition to Luxembourg (18%) and the Netherlands (21%), the main sources of FDI received by Portugal are Spain (21%), France (8%) and Germany (4%). The main sectors are: financial activities (22%), consultancy (18%), real estate (15%), retail and real estate (8%), respectively) and industry (7%).

3. Some of the most noteworthy deals closed in Portugal between the end of 2020 and Q1 2021 include, in 2020, the sale of Brisa (motorway concessionaire) to the investment fund Arcus, a consortium made up of Dutch, South Korean and Swiss investors, for around 3 billion euros; and the sale of Aquapor, a water and waste systems management company, to the French company Saur for 200 million euros in 2021.

What can we expect over the coming quarters?

The latest indicators suggest that investment will maintain a good tone over the coming quarters. For instance, the latest survey (Q2 2021) conducted by the National Statistics Institute of Portugal on the business sector's investment plans indicates that firms intend to increase investment by 4.9% in 2021, i.e. 6 decimal points more than in the previous survey conducted in October 2020. The containment of the pandemic and the consequent easing of mobility restrictions have improved the outlook for demand. Furthermore, following a period of great uncertainty, in the coming quarters we should see investments that were postponed at the height of the pandemic finally materialise. Besides the fact that 8 out of the 13 sectors included in the survey show a greater appetite for investment in 2021, it is also significant that 36% of the projected investment is aimed at boosting installed capacity.

The same survey suggests that there may be some change in the composition of the economic activities that drive the greatest levels of investment. In fact, construction firms are among those expecting to reduce investment compared to 2020, as a result of certain public works projects linked to the election period coming to an end. In the medium term, however, we can expect to see an increase in investment in residential construction, given that the Recovery and Resilience Plan includes an investment of some 1.5 billion euros in the field of social housing.

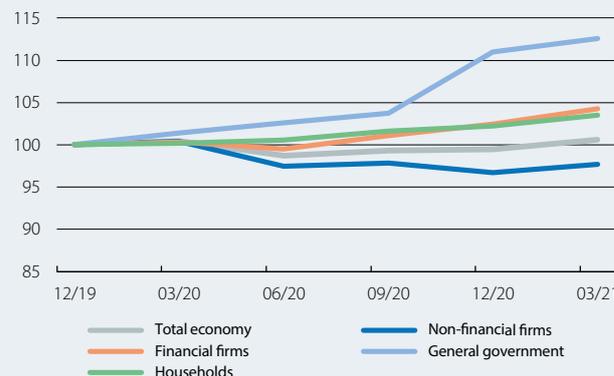
Investment in transportation equipment, meanwhile, could show renewed momentum, as transportation companies expect to increase investment by 43% in 2021. In turn, the positive trend in investment in machinery and equipment witnessed since Q3 2020 is expected to continue, as the survey indicates that one of the priorities for businesses is investment in the renewal of productive components.

In short, thanks to public and, to a lesser extent, residential investment, Portuguese investment continued its gradual recovery despite the pandemic. Looking ahead to the future, the receipt of significant EU funds in the coming years should help to sustain this buoyancy. In addition, if used appropriately and effectively, their impact on productivity and potential growth could be substantial.

Teresa Gil Pinheiro

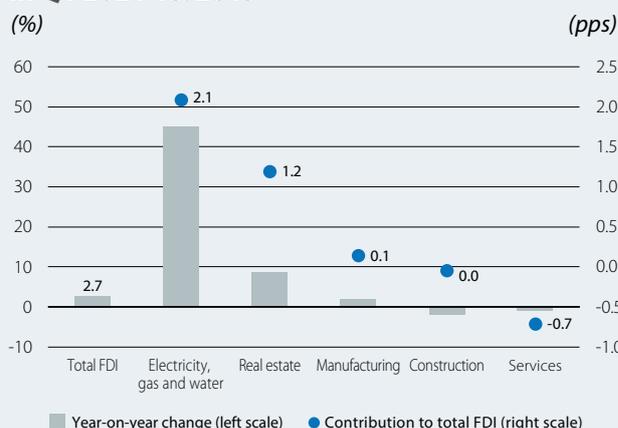
Portugal: investment volume by institutional sector

Index (100 = December 2019)



Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal.

Portugal: foreign direct investment (FDI) in Q1 2021 vs. 2019



Source: CaixaBank Research, based on data from the Bank of Portugal.

Portugal: business survey on investment plans for 2021

Sectors that expect greater investment growth	Investment expectation (annual growth, %)	Relative weight in GVA (%)
Increase in expected nominal investment	4.9	
Transportation and storage	42.9	4.9
Financial and insurance act.	38.4	4.9
Water collection, treatment and distribution; sanitation, waste management and decontamination	31.5	0.9
Manufacturing industry	4.3	17.2

Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal.

Activity and employment indicators

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Coincident economic activity index	0.9	-6.6	-8.0	-4.9	-2.8	1.0	2.1	2.8	...
Industry									
Industrial production index	-2.2	-6.9	-0.5	-2.1	-0.8	24.9	10.9	0.5	...
Confidence indicator in industry (<i>value</i>)	-3.2	-15.8	-19.4	-14.7	-13.6	-5.0	-0.7	0.4	-1.5
Construction									
Building permits - new housing (number of homes)	15.4	0.7	-10.8	12.8	43.8	-32.2	-1.9	...	...
House sales	1.7	-5.7	-1.5	1.0	0.5	...	...	...	...
House prices (<i>euro / m² - valuation</i>)	10.4	8.3	6.9	6.0	6.2	8.5	8.6	8.3	...
Services									
Foreign tourists (<i>cumulative over 12 months</i>)	7.8	-76.2	-58.0	-76.2	-86.7	-74.2	-74.2	-66.8	...
Confidence indicator in services (<i>value</i>)	12.9	-21.6	-37.8	-19.5	-19.1	-9.9	-2.6	2.6	6.9
Consumption									
Retail sales	4.4	-3.0	-1.1	-1.9	-7.5	16.1	7.0	2.9	...
Coincident indicator for private consumption	2.2	-6.8	-9.1	-4.7	-0.6	4.6	6.0	6.9	...
Consumer confidence index (<i>value</i>)	-8.0	-22.4	-26.9	-26.2	-24.4	-17.3	-14.2	-14.1	-13.8
Labour market									
Employment	1.2	-1.9	-3.1	-1.2	-1.3	4.5	4.7	5.2	...
Unemployment rate (<i>% labour force</i>)	6.6	7.0	8.0	7.3	7.1	6.7	6.8	6.6	...
GDP	2.5	-7.6	-5.6	-6.1	-5.3	15.5	...	...	...

Prices

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
General	0.3	0.0	0.0	-0.2	0.4	0.8	0.5	1.5	1.5
Core	0.5	0.0	-0.1	-0.1	0.5	0.2	-0.3	0.8	0.9

Foreign sector

Cumulative balance over the last 12 months in billions of euros, unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Trade of goods									
Exports (<i>year-on-year change, cumulative over 12 months</i>)	3.6	-10.2	-7.8	-10.2	-8.1	9.4	9.4	...	...
Imports (<i>year-on-year change, cumulative over 12 months</i>)	6.0	-15.1	-12.0	-15.1	-15.6	1.3	1.3	...	...
Current balance	0.9	-2.2	-2.1	-2.2	-2.1	-1.5	-1.5	...	...
Goods and services	1.7	-3.6	-2.9	-3.6	-3.5	-3.8	-3.8	...	...
Primary and secondary income	-0.7	1.3	0.8	1.3	1.4	2.3	2.3	...	...
Net lending (+) / borrowing (-) capacity	2.8	0.0	0.3	0.0	0.1	0.5	0.5	...	...

Credit and deposits in non-financial sectors

Year-on-year change (%), unless otherwise specified

	2019	2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	06/21	07/21	08/21
Deposits¹									
Household and company deposits	5.2	10.1	9.2	10.1	10.6	8.7	8.7	8.4	...
Sight and savings	14.8	18.8	18.4	18.8	18.5	15.3	15.3	15.2	...
Term and notice	-2.9	1.4	0.4	1.4	2.4	1.3	1.3	0.9	...
General government deposits	5.6	-21.0	-13.8	-21.0	-23.6	-15.0	-15.0	-18.8	...
TOTAL	5.2	9.0	8.2	9.0	9.4	7.8	7.8	7.4	...
Outstanding balance of credit¹									
Private sector	-0.1	4.6	2.1	4.6	5.1	4.4	4.4	4.4	...
Non-financial firms	-3.7	10.5	4.4	10.5	11.0	7.2	7.2	6.9	...
Households - housing	-1.3	2.1	0.7	2.1	2.6	1.0	1.0	1.2	...
Households - other purposes	16.5	-1.2	1.3	-1.2	-1.0	9.4	9.4	9.7	...
General government	-4.7	-4.2	-5.6	-4.2	-5.1	4.5	4.5	3.6	...
TOTAL	-0.3	4.2	1.8	4.2	4.7	4.4	4.4	4.4	...
NPL ratio (%)²	6.2	4.9	5.3	4.9	4.6	...	...	...	...

Notes: 1. Residents in Portugal. The credit variables exclude securitisations. 2. Period-end figure.

Source: CaixaBank Research, based on data from the National Statistics Institute of Portugal, Bank of Portugal and Datastream.

Public policies for the diffusion of technology

Public policies play a key role in helping technological advances to emerge and spread throughout the economy. In this article we address the dissemination of technology and the role of public policies in this process.

The difficulties in disseminating technology

If it were easy to copy the technology of our neighbours or competitors, there would be little technological difference between countries, or between regions within a country... let alone between companies within the same country and region! Yet, in reality, only a few countries and companies develop new technologies. In addition to these differences in creation, the ability of third countries to adopt new technologies is also highly uneven (see first chart).

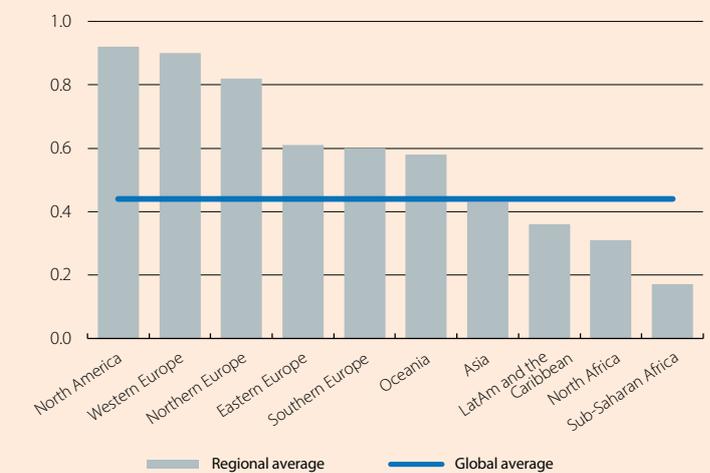
The spread of technology is by no means simple, neither between countries nor within countries themselves. According to Ricardo Hausmann, director of the Center for International Development at Harvard University, technology is composed of three types of knowledge: that of the tools and materials; the codes, manuals and instructions; and the tacit or practical knowledge (know-how) possessed by the professionals who have developed or who use the technology itself. This last element is the main stumbling block for the spread of technology.

As Hausmann explains, the tools and materials that make up a technology can be acquired; the codes can be understood with a sufficient educational base (through what is defined as explicit knowledge); but know-how can only be obtained through repeated face-to-face interaction with the technology itself (learning by doing) and this, inevitably, means it takes time.

Moreover, in modern societies this know-how is on such a vast scale that it cannot be covered by a single individual, nor by a handful of individuals, hence it is dispersed among large groups which are organised in an interconnected, modular way. Acquiring a new technology thus also requires a particular organisational fabric (an added hurdle for its dissemination).

Readiness for frontier technologies index

(Points)*



Note: * Index ranging from 0 (minimum) to 1 (maximum).
Source: CaixaBank Research, based on data from UNCTAD.

How public policies can help... and what we find in Spain's Recovery and Resilience Plan (RRP)

In the development and dissemination of future technologies, it is firstly necessary to have adequate digital infrastructures (these would be the aforementioned «tools» or «materials»). In this sphere, Spain is in a relatively strong position compared to the EU average: it has one of the widest deployments of very high capacity networks, covering 89% of households in 2019, compared to 44% across the EU on average and 45% in 2015 in Spain.¹

Despite this good starting point, the RRP emphasises the use of such digital tools by SMEs, whose small size often makes it difficult for them to adopt digital technologies. After all, having the tools available is not the same as making good use of them. The SME Support Plan (Component 13 of the RRP), with a significant investment planned (4,894 million euros), will play an essential role in facilitating this adoption. This component aims to promote the use of digital solutions in these smaller companies through grants, the creation of innovative digital hubs and training.

This latter element (training) is necessary to improve explicit knowledge on new technologies (the second defining component of technology according to Hausmann). In fact, in addition to this digital training focused on SMEs, the Spanish Plan will also invest in digital training for Spanish society as a whole, through the National Digital Skills Plan (Component 19 of the RRP). In other words, these are investments that will educate us on how to read and understand the «manuals» associated with new technologies.

1. See the article «Spain in the digital race» in the Dossier of the MR03/2021 for more details, as well as the article «NGEU: an international comparison of the recovery plans and their investments in new technologies» in this same Dossier.

Up to this point, however, we have only talked about policies and investments that affect the first two defining components of technologies (tools and explicit knowledge), but not the third (know-how), which is precisely the one that makes the dissemination of technology more difficult.

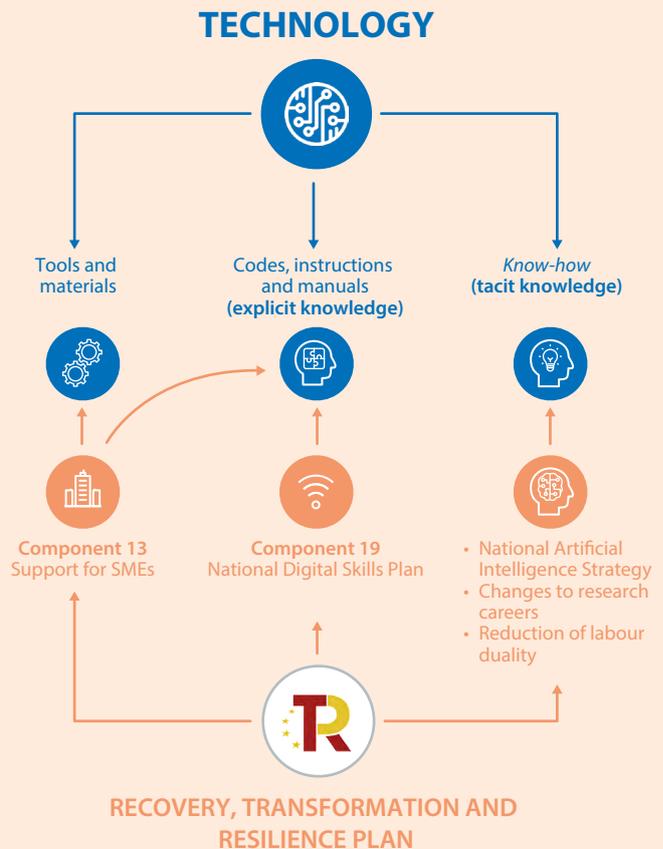
Attracting talent, combined with the mobility of this talent within societies, are essential ways for encouraging the flow of know-how and, therefore, the flow of new technologies. As Ricardo Hausmann often stresses, it is easier and quicker to move brains with know-how than it is to fill them with this know-how.

Promoting innovative projects is certainly one way to attract talent from around the world. In this regard, the National Artificial Intelligence Strategy, which is Component 16 of the Plan, provides a clear path for attracting talent. However, as argued by EsadeEcPol,² it would be important to complement these efforts in order to achieve the establishment within Spain of different European research sites such as the European Centre for Industrial Competition or Cybersecurity, or to go further with the proposed changes to research careers in order to give new hires with external assessments (tenure track) greater stability and career opportunities.

More generally, attracting talent is aided by certain labour market policies and institutions. The economic progress of countries depends heavily on the evolution of a small group of companies that grow at rates far above the average (referred to as gazelles). Labour policies, among others, can make it difficult to reallocate know-how between companies. Thus, for example, the duality that exists in Spain's labour market, as a consequence of various of these policies, means that the most senior workers with a high degree of know-how are more likely to remain in jobs in low-growth companies rather than take the leap to join companies which have an enormous growth potential but are just taking off. Similarly, many of these workers are entrepreneurs with the potential to found firms that could well become the country's gazelles of the future, but again, they do not take the leap to found them. On the other hand, the most entrepreneurial companies also suffer this duality, as they would prefer a more flexible labour market in the face of the risk of their project not living up to expectations. In this regard, reforms that help to reduce this duality, as proposed in the RRP, are clearly a positive development. Furthermore, establishing individual workers' funds which can be used in the event of dismissal or a change of company (like the Austrian backpack) would help to prevent talent (linked to know-how) from being retained in low-growth companies for fear of losing the rights acquired after a long employment relationship.

Finally, the dissemination of technology is easier when similar or related technologies exist in the country that wants to adopt the new technology in question. This is especially true in the case of complex technologies, since they often require high doses of know-how and particular organisational structures (the idea of knowledge collectivity is key in such cases). The presence of related technologies will mean that there are many workers with know-how of elements similar to the new technology. Moreover, the organisation of the related technology could often be easily converted to meet the new technological needs. In this regard, it is important that public institutions, in their task of distributing and coordinating NGEU funds, make a good diagnosis of the productive structure and technological status of Spain's various sectors in order to help drive the most suitable technological leaps.

Technology and policies for its dissemination



Source: CaixaBank Research, based on articles by Ricardo Hausmann and information from the Spanish Recovery and Resilience Plan.

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2. For a critical analysis of some of the elements of the Plan, see EsadeEcPol Brief #9 (April 2021) «Reformas, gobernanza y capital humano: las grandes debilidades del plan de recuperación» (article available in Spanish).

NGEU: an international comparison of the recovery plans and their investments in new technologies

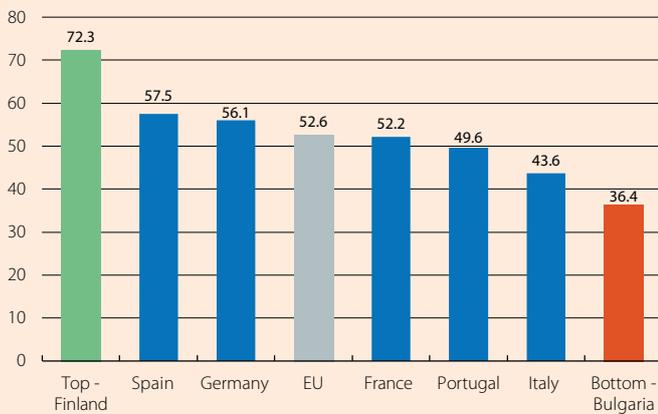
On the path to Industry 4.0 (characterised by the digital transformation in production) and following the first disbursements of funds from Next Generation EU, which has the digital transformation as one of its priorities, we assess the digital proposals put forward by the major EU countries in their recovery plans.

Digital starting point

Before evaluating the digital projects of the National Recovery and Resilience Plans (NRRPs), it is worth identifying where the various countries currently stand in the digital sphere. To this end, we use the synthetic DESI (Digital Economy and Society Index) published by the European Commission, which consists of five pillars: connectivity, human capital, the use of internet services, the integration of digital technology in businesses, and digital public services.

Digital Economy and Society Index (DESI 2020)

(Min. 0 - Max. 100)



Source: CaixaBank Research, based on data from the European Commission.

None of the countries we analyse (Germany, France, Italy, Spain and Portugal) lie at the top of the EU’s digital ranking according to the DESI (average level of the five pillars), which is led by the Nordic countries, with Finland at the helm (see first chart). This may come as a surprise, given that Germany and France are the economic engine of continental Europe.

Of the countries we analyse, Spain and Germany are the countries with the highest DESI score, slightly above the EU average and in the mid-range of all the 28 EU countries. The two countries have a similar level of digital development in 3 out of the 5 components of the DESI, while they differ in the pillars of digital public services, where Spain clearly stands out, and human capital, where Germany leads the way. In fact,

Germany’s lead when it comes to digital educational is a clear asset to its advantage, since it is a component that often takes time to develop (see second chart).

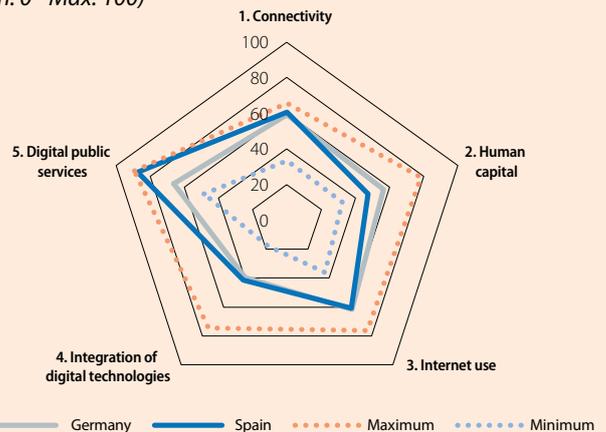
In contrast, Italy is well below the EU average and lies near the bottom of the European ranking. Lagging clearly behind in all the pillars of the DESI, it scores particularly poorly in human capital, where it is at the tail end of the 28 countries studied. France and Portugal, meanwhile, are also lagging behind, albeit less so than Italy.

The strengths and weaknesses of the national plans

The analysis above shows that all countries need significant digital investments in most of the areas defined in the 2030 digital objectives set out by the European Commission: infrastructure, knowledge or skills, businesses and the public sector. Logically, these areas have an obvious translation into the components of the DESI. In particular, infrastructure is closely linked to the DESI’s connectivity pillar; knowledge or skills, to that of human capital or training; businesses, to the integration of digital technology; and the public sector, to the DESI pillar of digital public services.

DESI components

(Min. 0 - Max. 100)



Note: The maximum (minimum) value corresponds to the EU country with the highest (lowest) score in that pillar.

Source: CaixaBank Research, based on data from the European Commission.

Starting with the country lagging the furthest behind, according to its NRRP Italy will invest substantially in all digital spheres. In particular, each of the four areas will receive between 18% and 34% of the nearly 50 billion euros allocated to digitalisation (a

priority to which it dedicates 25% of the total NGEU funds).¹ This is a necessary strategy to make substantial improvement in the digital arena. However, the planned expenditure on training (slightly below 20%) may be somewhat low, since the country sits in last place in this field according to the DESI (see the third chart for a comparison for each country between the gap in the DESI versus the top country and the planned level of investment).

In the same vein, Spain will also invest between 21% and 32% in each digital area (this priority absorbs 28% of the total NGEU funds).² As in the case of Italy, the expenditure allocated to training or human capital also appears somewhat insufficient. In contrast, the percentage allocated to the public sector is relatively high. Nonetheless, the Spanish and Italian NRRPs foresee a major investment in improving the use of digital technologies by businesses (this is where they allocate a greater percentage of the expenditure in both cases). This perimeter encompasses improvements in tech knowledge for employees and, consequently, in their digital skills. In reality, the areas of digital investment are not isolated, but highly connected. Classifying the expenditure of the various projects set out in the NRRPs is useful for making an initial assessment, but it is important to acknowledge that this approach can be somewhat arbitrary, so it is essential to delve deeper into the details.

Portugal, meanwhile, does plan to invest substantially and directly in improving its population's digital skills, with around 40% of the total digital spending being allocated to this area (digitalisation as a whole absorbs 22% of the NGEU funds). In fact, of the five components of Portugal's DESI, human capital is the one which scores the worst in the European ranking, so this is a good strategy for improving digitalisation in the country. Based on this initial review, it appears that Portugal could increase the level of investment in boosting digitalisation among its businesses, potentially at the expense of investment in public sector digitalisation, given that this latter area is in a more comfortable starting position in both comparative and absolute terms.

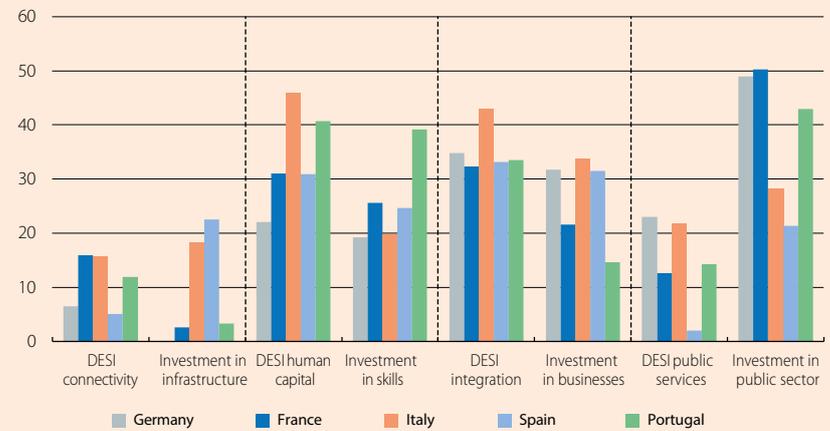
Finally, we have Germany and France, which have chosen very different approaches. Somewhat surprisingly, Germany has decided to devote a very high percentage of the NGEU funds to digitalisation (52%, more than double the level demanded by Brussels), compared with a meagre 21% in the case of France despite being at a clear disadvantage. Also, according to our analysis, Germany seems to target digital investments in the areas that need it most: the digitalisation of businesses and the public sector. In this latter pillar, although Germany may not seem to be far behind the leading country (in points), it is clearly lagging behind the rest of the countries included in our analysis. France's allocation of the funds, meanwhile, is more debatable, especially on the connectivity front, where it hardly plans to invest at all, as well as in the public sector, where it seems somewhat excessive.

In short, both Italy and also Spain and Portugal broadly propose digital investment projects that are appropriate to their needs: greater use of digital tools among businesses and better training for the population. Germany is also targeting investments in its weakest areas (public sector and businesses). France's priorities, however, do not seem so aligned with the shortcomings reflected in the Commission's indicators.

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Digital gap with the top country vs. digital investment *

(Points compared to the top country and % of digital spending in the field as a proportion of the total digital spending)



Note: * The digital gap is the difference between the country's DESI score for the pillar in question and that of the best country in that field (in points). It should be recalled that the DESI is an index ranging from 0 to 100. The smaller the bar, the closer to the top country. The investment is the % spent in this area as a proportion of the total digital investment according to the NRRP. The smaller the bar, the less investment in that area.

Source: CaixaBank Research, based on data from the European Commission (DESI and analysis of the NRRPs).

1. All figures are based on the reports that the European Commission has produced to assess the various NRRPs it received. We have also assumed that digital investments in health fall under the public services sphere.

2. Spain will invest some 20 billion euros in digitalisation (28% of the total NGEU funds). For more details of the quantities planned in the main countries, see the next article in this same Dossier.

Digital NGEU: an important leap or not?

Like electricity in its day, digital technologies are emerging as the new General Purpose Technology (GPT). That is, they are a technology with an enormous capacity to bring change to societies.¹ Given their transformative potential and the unparalleled level of investment that European countries will devote to digitalisation thanks to the Next Generation EU (NGEU) funds, it is important to analyse the potential impact that this new digital spending will have on Europe’s major economies.

Before we begin, it should be noted that not all countries will benefit equally from the boost provided by NGEU. The European funds are designed to provide greater support to the economies hardest hit the pandemic. Thus, Italy, Portugal and Spain will be among those most benefited in the distribution, with projected disbursements in the digital sphere of between 2% and 3% of their GDP (see first table), while France and Germany, which benefit to a lesser extent, will receive less than 0.5% of their GDP.

Next Generation EU: disbursements

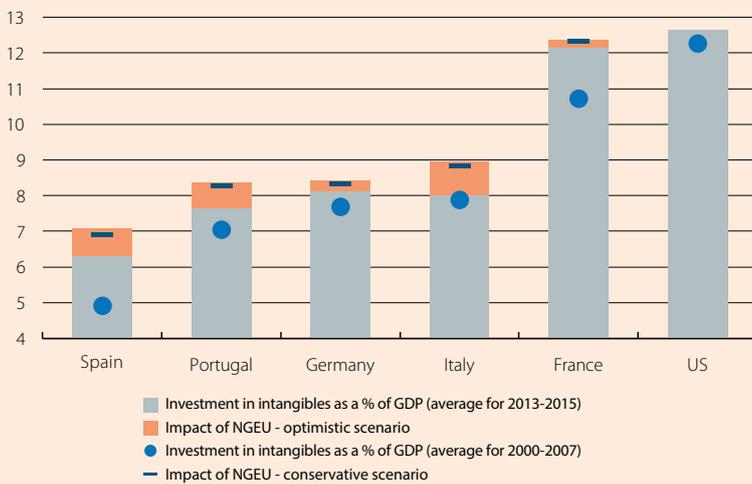
	NGEU	Digitalisation		
	€ billions	€ billions	% of total NGEU	% of 2020 GDP
Germany	25.6	13.5	52.6	0.4
France	39.4	8.4	21.3	0.4
Italy	191.5	48.1	25.1	2.9
Spain	69.5	19.6	28.2	1.7
Portugal	16.6	3.7	22.1	1.8

Notes: Italy considers both grants and loans under the Resilience and Recovery Mechanism. Without the loans, the amount would come to around 70 billion euros, in line with what Spain expects to receive. Only funds from the Resilience and Recovery Mechanism are considered, and other programmes such as REACT-EU are excluded.
Source: CaixaBank Research, based on data the European Commission reports on the NRRPs.

A boost to investment in intangibles

The boost to digitalisation is closely linked to investment in so-called intangible assets. Unlike more traditional investment assets, intangible assets lack a physical component. We are talking about investing in software, databases, training and know-how. Between one and two-thirds of digital investment is usually in intangibles.² Given the importance of this type of investment in

Investment in intangibles: starting position and impact of NGEU (average for 2021-2023) (% of GDP)



Source: CaixaBank Research, based on data from Intan, Spintan, Eurostat and the World Bank.

the most NGEU funds relative to their size. Italy leads the way, with an increase in the relative weight of investment in intangibles over GDP of between 0.8 and 0.9 pps a year in 2021-2023, while Spain and Portugal follow closely behind with an increase in the range of 0.6 to 0.8.³ These are notable figures (see chart): for Spain, this represents almost half of the increase it experienced in

the boost to the digital economy, as a first line of enquiry we wonder what impact NGEU will have on such investments.

In order to measure NGEU’s direct impact on investment in intangibles, we subtract the amounts corresponding to infrastructure investments (mainly broadband and 5G) from the total quantities expected to be invested in digitalisation shown in the first table, since infrastructure is not considered an intangible. We then add our estimate of the knock-on effect that NGEU-associated policies could have on private investment in intangibles. This calculation is based on the forecasts produced by the European Commission regarding NGEU’s economic impact. We also compute the impact assuming a much smaller knock-on effect (half of the level initially estimated).

The biggest gains occur in the countries that receive

1. For more details on the impact of General Purpose Technologies, see the article «NGEU: a very timely boost for digitalisation» in the Dossier of the MR03/2021.
 2. See R. Anderton, V. Jarvis, V. Labhard, F. Petroulakis and L. Vivian (2020). «Virtually everywhere? Digitalisation and the euro area and EU economies». ECB Occasional Paper (2020244).
 3. This calculation differs from that shown in the article «NGEU: a very timely boost for digitalisation» in the Dossier of the MR03/2021. The differences are due to the fact that, in this article, the knock-on effect is calculated on the basis of estimates by the European Commission, whereas in the previous article they were calculated based on government estimates.

2013-2015 compared to the period 2000-2007; for Portugal, it is a very similar increase to that which occurred between the two periods; while for Italy, it is a much bigger increase.

A boost to economic activity

In a second analysis, we built a scenario to assess the short- and long-term impact on GDP of the digital spending foreseen by the national recovery and resilience plans of the major European countries. To do this, we used the levels of investment in intangible digital assets mentioned above, we classified this expenditure according to the type of digital investment detailed in the various plans, and we used the tax multipliers related to digitalisation estimated by the German Institute for Economic Research (known as the DIW).⁴ Specifically, the DIW provides short- and long-term tax multipliers for the development of databases and cloud services in order to facilitate the use of artificial intelligence, the digitalisation of industry, the formation of human capital and the digitalisation of the health sector and general government administrations. According to this institute, the biggest impacts are those associated with programmes for developing human capital in digital skills, while the smallest impacts are those associated with public sector digitalisation. The last table shows the impact of the funds on GDP.

The estimates show that investments in digitalisation can have a substantial impact in the short term, with annual increases in GDP ranging from 0.3% to 0.6% for Italy, Spain, and Portugal, the countries earmarked to receive the most funds. It can also be seen that, in all cases, the investments result in a positive long-term impact on the level of GDP. If we compare the results country by country, Portugal stands out insofar as it is able to achieve a similar return to Italy despite investing substantially less in digitalisation (1.8% of its GDP, compared to 2.9% in the case of Italy). This is due to the greater relative weight that Portugal devotes to investments related to the formation of human capital.⁵

Impact of the NGEU investments in digitalisation (pp difference in GDP compared to a scenario without NGEU funds, annual average)

	2021-2022	2023-2025	2026-2041
Germany	0.10	0.07	0.02
France	0.10	0.07	0.02
Italy	0.58	0.51	0.13
Spain	0.33	0.30	0.07
Portugal	0.46	0.41	0.11

Source: CaixaBank Research.

In short, the NGEU funds have the potential to play a crucial role in accelerating the roll-out and implementation of new digital technologies in the EU and in boosting the economic recovery. The success of NGEU will lie in the effectiveness of the investments themselves, something that we will not be able to evaluate until a few years have passed.

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4. The estimates only include the direct effect of the NGEU funds and do not cover any funds derived from the knock-on effect. This is due to the difficulty in classifying these funds according to the different types of digital spending.

5. See the article «NGEU: an international comparison of the recovery plans and their investments in new technologies» in this same Dossier.

NGEU: the action plans in the digital sphere in key sectors of the Spanish economy

In this article, we review the main actions set out in the Recovery, Transformation and Resilience Plan in the sphere of digitalisation in three sectors of interest for the Spanish economy: tourism, industry and agri-food.¹

1. Tourism sector

The Plan includes investments in the sphere of digitalisation to help attract tourists, who are becoming increasingly digitalised, as well as to improve the management of tourism flows and to boost the competitiveness of companies in the sector.

The Plan mobilises funds from the Recovery and Resilience Mechanism (RRM) to the tune of 3.4 billion euros in the sector, of which it plans to devote 15.4% to investments in digitalisation. This amounts to some 540 million euros in the period between 2021 and 2023. To determine whether this sum is significant, we must compare it with the industry's usual level of investment in digitalisation. To this end, we made an approximation using the EUKLEMS database, which provides sector-by-sector information on investments in different areas, including some related to the digital sphere.²

This exercise indicates that the total amount set out in the Plan represents around 25% of the sector's average annual investment in 2014 and 2015. If we distribute the investment evenly across three years, this represents an increase of 8.3% per year. This is a notable increase if we consider that between 1996 and 2015 the average annual increase in investments of this kind in the sector was 7.2%.

If we look in more detail at the type of investments envisaged, they can be grouped into three categories:

- 1) **Tourism Sustainability Plan for destinations:** the objective of these investments is to improve the customer's tourism experience through digital applications (websites, apps), to develop and manage connectivity infrastructure (fibre optic cable, municipal WiFi networks, 5G), to develop artificial intelligence (AI) and big data tools (online reputation management, flow management, etc.) and to engage with businesses providing tourism services at the destination (improve training and offer advice on digital matters).
- 2) **Digital Transformation Plan for tourist destinations:** the proposal involves creating a platform that provides interoperability to the supply of public and private tourism services, as well as creating the Tourism Integration System (TIS), an environment for accessing information on supply and demand which offers analytical tools as well as other tools to facilitate interaction with tourists.
- 3) **Digital Transformation Plan for companies in the tourism value chain through artificial intelligence and other enabling technologies:** this latter chapter foresees the creation of a sector-wide database to enhance the use of big data and AI in the sector, as well as to generate a public-private collaborative environment in order to create a kind of app store aimed at businesses in the sector. Finally, financing will be offered for innovation processes, especially in SMEs.

While the actions considered are a step in the right direction, the Plan does not provide many details about the mechanisms for facilitating the process of the modernisation and digitalisation of SMEs.

2. Industrial sector

The aim is to promote the modernisation and productivity of the industrial ecosystem through the digitalisation of the value chain. MRR funds amounting to 3,781.5 million euros are expected to be mobilised, of which 25% is earmarked for investments in the sphere of digitalisation (some 950 million euros) between 2021 and 2023. When we approximate the sector's investments in digitalisation using the EUKLEMS database, the investment considered represents 16% of the sector's average annual

1. In 2019, these three sectors together accounted for around 29% of GDP.

2. To approximate the volume of investment in digitalisation, we sum up the categories of software and databases, research and development, computers and telecommunications equipment. We also approximate the tourism sector using the official CNAE economic activity sectors I and R (hospitality and artistic, recreational and entertainment activities).

investment in 2014 and 2015. Distributed evenly across three years, this represents an increase of 5.4% per year, a significant rate given that the average growth in this type of investment in the sector stood at 4.0% between 1996 and 2015.

The investments considered can be distinguished between two areas of focus:

- 1) **Promoting sector-wide data spaces:** facilitating the creation of large-scale sectoral data spaces to serve as a basis for digitalisation or to be made use of with the help of analytical tools. Finance pilot projects in order to explore data exchange possibilities.
- 2) **Investments in the sphere of the circular economy:** financing the adoption of digital technologies aimed at environmental management.

There is a third, very important area of focus which is based on the new figure of public-private collaboration (so-called PERTEs), designed to promote projects with a high knock-on capacity as well as containing elements of investment in digitalisation. However, the specific actions that will be carried out in this third area are yet to be determined.

3. Agri-food and fisheries sector

The focus of the Plan is to respond to the challenges that are eroding the sector's competitiveness. One such challenge is the delay in the incorporation of digital technologies. To address this delay, 7% of the RRM funds allocated to the sector (1,051 million euros in total) are earmarked for investments in digitalisation, representing some 74 million euros to be distributed between 2021 and 2023.

While the amount in absolute terms may seem small, the figure envisaged in the Plan represents 90% of the sector's average annual investment in 2014 and 2015. This is a very significant amount which could mark an important step in the digitalisation of a sector which currently lies at the tail end of the ranking of sectors in this field, according to the CaixaBank Sectoral Digitalisation Index 2020.³

Looking at the investments in more detail, we can distinguish between actions aimed at the agri-food sector and others more specific to the fisheries sector:

- 1) On the side of the **agri-food sector**, a convertible loan facility is to be opened through the public national innovation company (Empresa Nacional de Innovación S.A., or ENISA) for SMEs in the agri-food and rural sectors that propose innovative and digital projects. It also proposes creating a digital innovation hub to make it easier for businesses to adopt new technologies and to create an observatory to track the entire process of the sector's digitalisation.
- 2) On the side of the **fisheries sector**, a battery of measures is envisaged, including aid for the digitalisation of the fishing fleet and the fishing surveillance services, as well as investments to modernise the Network of Marine Reserves of Interest for Fishing.

In short, the Plan envisages significant digital investments in the three sectors considered. While the areas of action appear to be adequate, the final impact will depend on the quality of the investments that are carried out. In this regard, coordination between the public and private sectors and independent assessments of the various investments will be important.

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3. See <https://www.caixabankresearch.com/en/document/20-july-2021/caixabank-sectoral-digitalisation-index-2020>

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